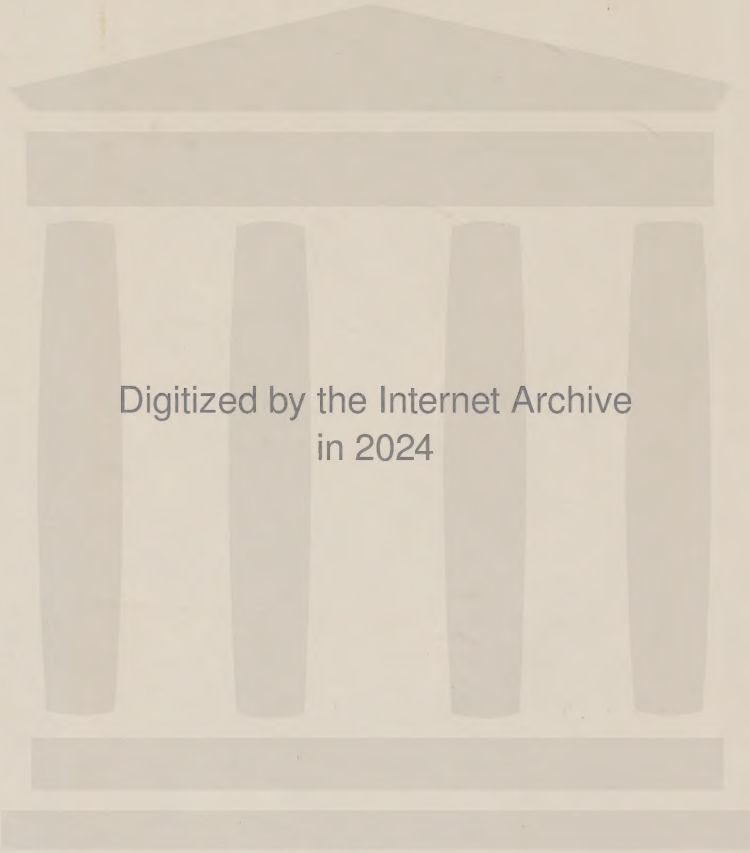


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The Aviator

PIONEERS ALL!

ACHIEVEMENTS
IN ADVENTURE

EDITED BY

JOSEPH
LEWIS
FRENCH



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FOREWORD

PIONEERS ALL! Red-blooded men—men who extended the boundaries of the United States as they are today—who carried her flag to the furthest seas! Men who faced every form of adventure and hardship and lived in constant peril of their lives! Men who laughed at death and continually courted the bright face of danger! Men in a word who were in a true sense the founders of our great country. Here is a fair toll of them, from the great expedition of Lewis and Clark to the feat that with all their hardihood and courage they never dreamed of, the conquest of the Atlantic by air—only yesterday.

This is a book of the out-of-doors. The breath of the seas, the prairies, the great rivers, the lofty Rockies, blows through its pages. It is no fanciful recital of achievement, but is told for the most part by the men who were actual participators in the scenes and events which they describe. Nearly all of them might say with Caesar, "I came! I saw! I conquered!"

America has for four centuries been the land of the pioneer, distinctively a realm of adventure;—and some effort to compress within the limits of a moderate-sized book what he has done in various lines of achievement for the past century will be found here. His day is over—except where Science beckons he can find no new paths:—but in the full belief that the story of his early adventures will always be of the most vital interest these pages are presented to the reader.

THE EXPLORER

LEWIS AND CLARK *

1804

JULY 22.—Our camp is by observation in latitude $41^{\circ} 3' 11''$.¹ Immediately behind it is a plain about five miles wide, one half covered with wood, the other dry and elevated. The low grounds on the south near the junction of the two rivers are rich but subject to be overflowed. Farther up the banks are higher and opposite our camp the first hills approach the river, and are covered with timber such as oak, walnut and elm. The immediate country is watered by the Papillon (Butterfly) Creek, of about 18 yards wide and three miles from the Platte; on the north are high open plains and prairies and at nine miles from the Platte the Moscheto Creek and two or three small willow islands. We stayed here several days during which we dried our provisions, made new oars, and prepared our despatches and maps of the country we passed for the President of the United States to whom we intend to send them by a pirogue from this place. The hunters have found game scarce in this neighborhood; they have seen deer, turkeys and grouse; we

* From Lewis and Clark's Journals.

¹ Platte and Missouri Rivers. The expedition started May 14th.

have also an abundance of ripe grapes, and one of our men caught a white catfish, the eyes of which were small and its tail resembling that of a dolphin. The present season is that in which the Indians go out into the prairies to hunt the buffalo; but as we discovered some hunters' tracks, and observed the plains on fire in the direction of their villages, we hoped that they might have returned to gather the green Indian corn, and therefore despatched two men to the Pawnee villages with a present of tobacco and an invitation to the chief to visit us. They returned in two days. Their first course was through an open prairie to the south. They then reached a small beautiful river called the Elkhorn or Corne de Ceri. (These natural features have brush names in some instances.) About 100 yards wide with clear water and a gravelly channel. It empties a little below the Pawnee village into the Platte which they crossed and came to the village, about forty-five miles from our camp. They found no Indians though there were fresh tracks of a small party. The Ottoes were once a powerful nation and live about 20 miles above the Platte on the south bank of the Missouri. Being reduced they migrated to the neighborhood of the Pawnees under whose protection they now live. Their village is on the south side of the Platte about 30 miles from its mouth; and their number is 200 including about 30 families of Missouri Indians who are incorporated with them.

Five leagues above them on the same side of the river, resides the nation of Pawnees. This people were among the most numerous of the Missouri Indians, but have been gradually broken and dispersed and even within the past ten years have

undergone some sensible changes. They now consist of four bands; the first of about 500 men, to whom of late years have been added a second band called the Republican Pawnees from their having lived on the Republican branch of the River Kansas — they amount to nearly 250 men. The third are the Pawnees Loups or Wolf Pawnees, who live on the Wolf fork of the Platte, about 90 miles from the principal village and number 280 men. The fourth band originally resided on the Kansas and Arkansaw but in their wars with the Osages they were so often defeated that they at last retired to their present home on the Red River where they form a tribe of 400 men. All these tribes live in villages and subsist chiefly on corn; but during the intervals of farming rove the plains in quest of buffalo.

Beyond them on the river and westward of the Black Mountains are the Kaninaviesch consisting of about 400 men. They are supposed to have been originally Pawnees — but they have degenerated and now no longer live in villages but rove the plains. Still farther to the westward are several tribes who wander and hunt to the sources of the River Platte and thence to Rock Mountain. Of these tribes little is known more than the names and the numbers, as first the Straitan or Kite Indians, a small tribe of one hundred men. They have acquired the name of Kites from their flying; that is their being always on horseback; and the smallness of their numbers is to be attributed to their extreme ferocity; they are the most warlike of all the western Indians; they never yield in battle; they never spare their enemies; and the retaliation of this barbarity has almost extinguished the nation. Then come the Wetapahato and Kiowa tribes

associated together and amounting to two hundred men; the Castahana of three hundred men, to which are to be added the Cataka, seventy-five men, and the Dotami. These wandering tribes are conjectured to be the remnants of the great Padouca nation who occupied the country between the upper parts of the River Platte and the River Kansas. They were visited by Bourgemont in 1724, and then lived on the Kansas River. The Seats which he described as their residences are now occupied by the Kansas nation; and of the Padoucas there does not now exist even the name.

It being vital to the success of further progress to hold council with the Indians messengers were sent with presents and a few days afterwards: in the afternoon the party arrived with the Indians consisting of Little Thief and Big Horse, together with six other chiefs and a French interpreter. We met them under a shade and after they had finished a repast we supplied them we inquired into the origin of the late war between their tribe and the Mahas, which they related with great frankness. * * * The evening was closed by a dance; and the next day the chiefs and warriors being assembled at ten o'clock we explained the speech we had already sent from the Council Bluffs¹ and renewed its advices. They all replied in turn and the presents were then distributed. We gave large medals to Big Horse and Little Thief, and a small medal to a third chief. We also gave a kind of certificate or letter of acknowledgment to five of the warriors expressive of our favor and their good intentions. One of them dissatisfied returned us the certificate, but the chief fearful of

¹ To Washington.

our being offended begged it might be restored to him; this we declined and rebuked them severely for having in view mere traffic instead of peace with their neighbors. This displeased them at first, but at length all petitioned that it should be given to the warrior who came forward and made an apology. We then handed it to the chief to be given to the most worthy among them and he bestowed it on the same warrior whose name was Great Blue Eyes. After a more substantial present of small articles and tobacco the council was ended with a dram to the Indians. In the evening we exhibited different objects of curiosity and particularly the air-gun which gave them great surprise. Those people are almost naked, having no covering except a sort of breech cloth around the middle with a loose blanket or buffalo-robe painted, thrown over them. This delegation was from the Missouris and Ottoes who speak very nearly the same language. They all begged us to give them whiskey.

The next morning the Indians mounted their horses and received from us a canister of whiskey at parting. We then set sail and after passing two islands on the north came to one on that side under some bluffs. Here we had the misfortune to lose one of our sergeants Charles Floyd.¹ He was yesterday seized with a bilious colic, and all our care and attention could not save him. A little before his death he said to Captain Clark "I am going to leave you"; and he died with a composure which justified the high opinion we had formed of his firmness and good conduct. He was buried on the top of a bluff with the honors due to a brave soldier, and the place of his interment

¹ The organization was military.

marked by a cedar post on which we put his name and the date of his death. We named this place after him and also a small river about a mile to the north where we encamped.

We shortly after passed the mouth of the great Sioux River — this river comes in from the north and is about one hundred and ten yards wide. M. Durion our Sioux interpreter says that it is navigable upwards of two hundred miles to the falls and even beyond them. That below the falls a creek falls in from the Eastward after passing through cliffs of red rock. Of this the Indians make their pipes: and the necessity of procuring them has introduced a sort of law of nations, by which the banks of the creek are sacred, so that even tribes at war meet at these quarries without hostility. Thus we find even among savages certain things held sacred which mitigate the rigours of their merciless warfare.

A few days following we had a violent storm of wind and rain in the evening and had to repair our pirogues the next day. At four o'clock Sergeant Pryor and his men came back with five chiefs of the Sioux and about seventy warriors and boys. Sergeant Pryor reported that on reaching their village twelve miles from our camp he was met by a party with a buffalo-robe on which they desired to carry their visitors: an honour which they declined informing the Indians that they were not the commanders of the party. As a mark of respect they were then presented with a fat dog, already cooked of which they partook heartily and found it well-flavored. The camps of the Sioux are of a conical form covered with buffalo-robes painted with various figures and colours, with an aperture in the top for the smoke

to pass through. The lodges contain from ten to fifteen persons and the interior arrangement is compact and handsome, each lodge having a place for cooking detached from it. The next day we prepared a speech and some presents and then sent for the chiefs and warriors whom we received under a large oak-tree near to which the flag of the United States was flying. Captain Lewis delivered the speech and we gave to the grand chief a flag, a medal, and a certificate, to which we added a chief's coat; that is a richly-laced uniform of the United States Artillery Corps, and a cocked hat and red feather. A second chief and three inferior ones were given medals and a present of tobacco and articles of clothing. We then smoked the pipe of peace, and the chiefs retired to a bower formed of bushes by their young men, where they divided the presents among each other and ate and smoked and held a council on their answer to us to-morrow. The young people exercised their bows and arrows in shooting at marks for beads as prizes; and in the evening the whole party danced until a late hour. In the course of their amusement we threw among them some knives, tobacco, bells, tape and binding with which they were much pleased. Their musical instruments were the drum, and a sort of little bag made of buffalo-hide dressed white with small shot or pebbles in it and a bunch of hair tied to it for a handle. This produces a sort of rattling music with which the party was annoyed by four musicians during the council this morning.

* * * * *

These Indians are the Yanktons a tribe of the great nation of the Sioux. They are stout and well proportioned and have a

certain air of dignity and boldness. They are very fond of decorations and use paint freely and porcupine quills and feathers. Some of them wear necklaces of brass chains three inches long and close strung. They have only a few fowling-pieces among them. What struck us most was an institution peculiar to them and to the Kite Indians — from whom it is copied we were told. This is an association of the bravest and most active young men who are bound to each other by attachment and secured by a vow never to retreat before danger or give way to their enemies. In war they go forward openly and without any effort at shelter. This determination became heroic — or ridiculous — a short time since when these young Yanktons were crossing the Missouri on the ice. A hole lay immediately in their course but the leader went straight ahead and was drowned. Others would have followed but were forcibly stopped by the rest of them. These young men sit and encamp and dance apart from the rest; their seats in council are superior to those even of the chiefs and their persons more respected. But their boldness diminishes their numbers; so that the band is now reduced to four warriors who were among our visitors.

* * * * *

Early in the morning of September 16th having reached a convenient spot on the south side of the river, we encamped just above a small creek which we called Corvus having killed an animal of that genus near it. Our camp is in a beautiful plain with timber thinly scattered for three-quarters of a mile, consisting chiefly of elm, cottonwood, some ash of an indifferent quality, and a considerable quantity of a small species of white oak. This

tree seldom rises higher than thirty feet and branches very much, — the bark is rough, thick and of a light colour; the leaves small, deeply indented, and of a pale green; the cup which contains the acorn is fringed on the edges; the acorn itself which grows in great profusion is of an excellent flavor and has none of the roughness which most other acorns possess: they are now falling and have probably attracted the number of deer which we have seen at this place. The ground having been recently burned by the Indians is covered with young green grass and in the neighbourhood are great quantities of fine plums. We killed a few deer for the sake of their skins which we wanted to cover the pirogues, the meat being too poor for food. About a quarter of a mile behind our camp, at an elevation of twenty feet a plain extends parallel with the river for three miles. Here we saw a grove of plum trees loaded with fruit, now ripe and differing in nothing from those of the Atlantic States except that the tree is smaller and more thickly set. The ground of the plain is occupied by the burrows of multitudes of barking squirrels, who entice hither the wolves of a small kind, hawks and polecats. This plain is intersected nearly in its whole extent by deep ravines and steep irregular rising grounds of from one to two hundred feet. On ascending one of these we saw a second high level plain stretching to the south as far as the eye could reach. To the westward a high range of hills about twenty miles distant. All around the country had been recently burned and a young green grass about four inches high covered the ground which was enlivened by herds of antelopes and buffalo; the last of which were in such multitudes that we cannot exaggerate in saying that at a

single glance we saw three thousand of them before us. Of all the animals we had seen the antelope seems to possess the most wonderful fleetness. Shy and timorous they generally repose only on the ridges which command a view of all the approaches of an enemy; — the acuteness of their sight distinguishes the most distant danger: the delicate sensibility of their smell defeats concealment; and when alarmed their rapid career seems more like the flight of birds than the movements of a quadruped. After many unsuccessful attempts Captain Lewis at last by winding around the ridges approached a party of seven which were on an eminence towards which the wind was unfortunately blowing. The only male of the party frequently encircled the summit of the hill as if to announce any danger to the females which formed a group at the top. Although they did not see Captain Lewis, the smell alarmed them and they fled when he was still at a distance of two hundred yards: he immediately ran to the spot where they had been; a ravine concealed him from them; but the next moment they appeared on a second ridge at a distance of three miles. He doubted whether they could be the same; but the number and the extreme rapidity with which they continued their course convinced him.

The following day we reached an island in the middle of the river nearly a mile in length and crossed with red cedar: at its extremity a small creek comes in from the north: we there met with some sand-bars and the wind being very high and ahead, we encamped having made only seven miles. In addition to the common deer which were in great abundance we saw goats, elk, buffalo, and the black-tailed deer; the large wolves too are very

numerous, and have long hair with coarse fur of a light color. A small species of wolf about the size of a gray fox was also killed and proved to be the animal we had hitherto mistaken for a fox. There were also many porcupines, rabbits and barking squirrels in the neighborhood.

In the morning we observed a man riding on horseback down towards the boat and we were much pleased to find that it was George Shannon, one of our party for whose safety we had been very uneasy. Our two horses having strayed from us on the 26th August he was sent to search for them. After he had found them he started to rejoin us, but seeing some other tracks which must have been those of Indians, and which he mistook for our own, he concluded that we were ahead, and had been for sixteen days following the bank of the river above us. During the first four days he exhausted his bullets, being obliged to subsist for twelve days on a few grapes, and a rabbit which he had killed by making use of a hard piece of stick for a ball. One of his horses gave out and was left behind; the other he kept as a last resource for food. Despairing of overtaking us, he was returning down the river in the hope of meeting some boat with Indians, and was on the point of killing his horse when he discovered us. September 25. The morning was fine and the wind continued from the southeast. We raised a flagstaff and an awning under which we assembled at twelve o'clock with all our party¹ parading under arms. The chiefs and warriors from the camp two miles up the river met us, to the number of fifty or sixty and after smoking we delivered them a speech, and gave the chiefs pres-

¹ Forty-one men, full musters.

ents. We then invited them on board, and showed them the boat, the air-gun and such curiosities as we thought might amuse them. In this we succeeded too well for after giving them a quarter of a glass of whiskey, which they seemed to like very much, and sucked the bottle it was with difficulty we got rid of them. Captain Clark at last started for the shore with them in a pirogue with five of our own men; but it seems they had formed a design to stop us. No sooner had the party landed than three of the Indians seized the boat's cable, and one of the soldiers of the chief put his arms around the mast — in token of possession. The second chief then said that we should not go on; that they had not received enough presents. Captain Clark told him that we were not squaws but warriors — that we could not be stopped from going on; that we were sent by our Great Father who could in a moment exterminate them. The chief replied he too had warriors and started to attack Captain Clark who immediately drew his sword, and signaled the men in the main boat to prepare for action.

The Indians surrounding him drew arrows and were just bending their bows when the swivel gun ¹ was instantly trained on them — and twelve of our best men who had at once rowed over jumped ashore to help Captain Clark.

Those movements took them aback — the great chief ordered the young men away from our pirogue and they withdrew for council. Captain Clark went forward and offered his hand to the first and second chiefs but was refused. He retired and boarded the pirogue but had not got more than ten paces when both the

¹ A small cannon.

chiefs and two of the warriors waded in after the boat and were taken on board.

September 26. Our conduct yesterday seemed to have inspired the Indians with fear of us, and as we wanted to be well with them we complied with their wish that their squaws and children also should see us and our boat — which would be a great curiosity to them.

We finally anchored on the south side of the river where a crowd of them were waiting for us. Captain Lewis went on shore and remained several hours: and finding their disposition friendly this time, we resolved to remain during the night to a dance which they were preparing for us. Captains Lewis and Clark who went on shore one after the other were met on landing by ten well-dressed young men who took them up in a robe highly decorated, and carried them to a large council-house, where they were placed on a dressed buffalo-skin by the side of the grand chief. The hall or council-room was in the shape of three-quarters of a circle, covered at the top and sides with skins well-dressed and sewed together. Under this shelter sat about seventy men forming a circle round the chief, before whom were placed a Spanish flag and the one we had given them yesterday. This left a vacant circle of about six feet diameter, in which the pipe of peace was raised on two forked sticks, about six or eight inches from the ground, and under it the down of the swan was scattered; a large fire in which they were cooking provisions burned near, and in the centre about four hundred pounds of excellent buffalo-meat as a present for us. As soon as we were seated an old man got up and after approving what we had done in our

own defense, begged us to take pity on their unfortunate situation. The great chief rose after and made an harangue to the same effect; then with great solemnity he took some of the most delicate parts of the dog which was cooked for the festival and held it to the flag by way of sacrifice. This done he held up the pipe of peace, and first pointing it to the heavens, then to the four quarters of the globe and then to the earth, he made a short speech, lighted it and presented it to us. As we smoked in turn he harangued his people, and then the repast was served. It consisted of the dog which they had just been cooking, this being a great dish among the Sioux and used on all festivals; to which were added pemitigon, a dish made of buffalo meat dried or jerked; pounded and mixed raw with grease and a kind of ground potato dressed like the preparation of Indian corn called hominy to which it is little inferior. Of all their luxuries, which were placed before us in platters with horn-spoons, we took the latter, but we could as yet partake but sparingly of the dog.

We ate and smoked for an hour when it became dark; everything was then cleared away for the dance, a large fire being made in the centre of the house, giving at once light and warmth to the ball-room. The orchestra was composed of about ten men, who played on a sort of tambourine formed of skin stretched across a hoop, and made a jingling noise with a long stick to which the hoofs of deer and goats were hung. The third instrument was a small skin bag with pebbles in it; these with five or six young men for the vocal part made up the band. The women then came forward highly decorated; some with poles in their hands on which were hung the scalps of their enemies; others

with guns, spears or different trophies taken in war by their husbands or brothers. They arranged themselves in two columns and danced toward each other till they met in the center, when the rattles were shaken, and they all shouted and returned to do it over again. They have no step, but shuffle along the ground. The music is no more than a confusion of noises, pointed by hard or gentle blows on the buffalo skin. The song is perfectly extemporaneous. In the pauses a man comes forward and recites in a low guttural some story or incident — martial or ludicrous — or as was the case this evening voluptuous and indecent. Sometimes they alternate, the orchestra first and then the women raise their voices in chorus making a music more agreeable, that is, less intolerable than the musicians. The men dance always separate from the women and about the same except they jump up and down instead of shuffling; in their war dances the recitations are always of a military cast.

In person these Tetons are rather ugly and ill-made — their legs and arms are too small, their cheek bones are high and their eyes projecting. The females are the handsomer. Both sexes appear cheerful and sprightly; but in our intercourse we discovered they were cunning and vicious. The men shave their heads except a small tuft on top which they only sacrifice on the death of a near relation. In full dress they fasten to this a hawk's feather or calumet feather worked with porcupine quills. They paint the face and body with a mixture of grease and coal. The chief garment is a buffalo robe dressed white and adorned with loose porcupine quills to make a jingling noise when they move — and painted with uncouth symbols. The leg from the

hip to the ankle is covered by leggins of dressed antelope with two inch side-seams ornamented by tufts of hair from scalps won in war. Their winter moccasins are dressed buffalo-skin soled with thick elk-skin. On great occasions or in full dress the young men drag after them the entire skin of a polecat fixed to the heel of a moccasin. Another such skin serves as a tobacco-pouch tucked into the girdle. They smoke red willow bark either alone or mixed with tobacco when they have any. The pipe is of red clay, with an ash stem of three or four feet, highly ornamented with feathers, hair, and porcupine quills. The hair of the women grows long and is parted from the forehead across the head, at the back of which it is either collected into a kind of bag or hangs down over the shoulders.

They wear the same kind of moccasins and leggins as the men but the latter do not reach below the knee where they are met by a long loose shift of skins which reaches nearly to the ankles. This is fastened over the shoulders by a string, and has no sleeves, but a few pieces of the skin hang a short distance around the arms. Sometimes a girdle fastens this skin round the waist and over is thrown a robe like that worn by the men. They seem fond of dress. They have among them officers to keep the peace — like civilized peoples — whose distinguishing mark is a collection of two or three raven skins fastened to the girdle behind the back in such a way that the tails stick out horizontally from the body. On the head too is a raven skin split into two parts and tied so as to let the beak project from the forehead.

THE PIONEER

DANIEL BOONE *

DANIEL BOONE was born on the twenty-second day of August, 1734 in what is now the State of North Carolina.

From earliest childhood, he developed a peculiar and remarkably interesting character. He was silent, thoughtful, of pensive temperament, yet far from gloomy, never elated, never depressed. He exhibited from his earliest years such an insensibility to danger, as to attract the attention of all who knew him. Though affectionate and genial in disposition, never morose or moody, he still loved solitude, and seemed never so happy as when entirely alone. His father remained in his home upon the Delaware until Daniel was about ten years of age.

Various stories are related of his adventures in these his early years. Before he was ten years old he would take his rifle and plunge boldly into the depths of the illimitable forest. He seemed, by instinct, possessed of the skill of the most experienced hunter, so that he never became bewildered, or in danger of being lost. There were panthers, bears and wolves in those forests, but of them he seemed not to have the slightest fear. His skill as a marksman became quite unerring. Not only racoons, squirrels, partridges and other such small game were the result of his hunt-

* By John S. C. Abbott. Copyright, Dodd, Mead & Co.

ing expeditions, but occasionally even the the fierce panther fell before his rifle ball. From such frequent expeditions he would return silent and tranquil, with never a word of boasting in view of exploits of which a veteran hunter might be proud.

Indeed his love of solitude was so great, that he reared for himself a little cabin in the wilderness, three miles back from the settlement. Here he would go all alone without even a dog for companion, his trusty rifle his only protection. At his camp fire, on the point of his ramrod, he would cook the game which he obtained in abundance, and upon his bed of leaves would sleep in sweetest enjoyment, lulled by the wind through the tree-tops, and by the cry of the night bird and of the wild beasts roaming around.

The education of young Boone was necessarily very defective. There were no schools then established in those remote districts of log cabins. But it so happened that an Irishman of some little education strolled into that neighborhood, and Squire Boone engaged him to teach, for a few months, his children and those of some others of the adjacent settlers. These hardy emigrants met with their axes in a central point in the wilderness, and in a few hours constructed a rude hut of logs for a school-house. Here young Boone was taught to read, and perhaps to write. This was about all the education he ever received. The forest was his congenial home, hunting the business of his life.

His native strength of mind, keen habits of observation, and imperturbable tranquillity under whatever perils or reverses, gave him skill in the life upon which he was to enter, which the teachings of books alone could not confer. No marksman could sur-

pass him in the dexterity with which with his bullet he would strike the head of a nail, at the distance of many yards. No Indian hunter or warrior could with more sagacity trace his steps through the pathless forest, detect the footsteps of a retreating foe, or search out the hiding place of the panther or the bear. In these hunting excursions the youthful frame of Daniel became inured to privation, hardship, endurance. Taught to rely upon his own resources, he knew not what it was to be lonely, for an hour. In the darkest night and in the remotest wilderness, when the storm raged most fiercely, although but a child he felt peaceful, happy, and entirely at home.

About the year 1748 (the date is somewhat uncertain), Squire Boone, with his family, emigrated seven hundred miles farther south and west to a place called Holman's Ford on the Yadkin river, in North Carolina. The Yadkin is a small stream in the north-west part of the State. A hundred years ago this was indeed a howling wilderness. We can imagine that this journey must have been a season of unspeakable delight to Daniel Boone. Alike at home with the rifle and the hatchet, never for a moment bewildered, or losing his self-possession, he could, even unaided, at any hour, rear a sheltering hut for his mother and his sisters, before which the camp-fire would blaze cheerily, and their hunger would be appeased by the choicest viands from the game which his rifle had procured.

No details are given respecting the arrival of this family on the banks of the Yadkin, or of their habits of life while there. We simply know that they were far away in the untrodden wilderness, in the remotest frontiers of civilization. Bands of Indians

were roving around them, but even if hostile, so long as they had only bows and arrows, the settler in his log-hut, which was a fortress, and with his death-dealing rifle, was comparatively safe.

Here the family dwelt for several years, probably in the enjoyment of abundance, and with ever-increasing comforts. The virgin soil, even poorly tilled, furnished them with the corn and the vegetables they required, while the forests supplied the table with game. Here Daniel Boone grew up to manhood. His love of solitude and of nature led him on long hunting excursions, from which he often returned laden with furs. The silence of the wilderness he brought back with him to his home. And though his placid features ever bore a smile, he had but few words to interchange with neighbors or friends. He was a man of affectionate, but not of passionate nature. It would seem that other emigrants were lured to the banks of the Yadkin, for here, after a few years, young Boone fell in love with the daughter of his father's neighbor, and that daughter, Rebecca Bryan, became his bride. He thus left his father's home, and, with his axe, speedily erected for himself and wife a cabin, we may presume at some distance from sight or sound of any other house. There "from noise and tumult far," Daniel Boone established himself in the life of solitude, to which he was accustomed and which he enjoyed. It appears that his marriage took place about the year 1755. The tide of emigration was still flowing in an uninterrupted stream towards the west. The population was increasing throughout this remote region, and the axe of the settler began to be heard on the streams tributary to the Yadkin.

Daniel Boone became restless. He loved the wilderness and

its solitude, and was annoyed by the approach of human habitations, bringing to him customs with which he was unacquainted, and exposing him to embarrassments from which he would gladly escape. The mode of life practiced by those early settlers in the wilderness is well known. The log-house usually consisted of but one room, with a fire-place of stones at the end. These houses were often very warm and comfortable, presenting in the interior, with a bright fire blazing on the hearth, a very cheerful aspect. Their construction was usually as follows: Straight, smooth logs about a foot in diameter, cut of the proper length, and so notched at the ends as to be held very firmly together, were thus placed one above the other to the height of about ten feet. The interstices were filled with clay, which soon hardened, rendering the walls comparatively smooth, and alike impervious to wind or rain. Other logs of straight fiber were split into clap-boards, one or two inches in thickness, with which they covered the roof. If suitable wood for this purpose could not be found, the bark of trees was used, with an occasional thatching of the long grass of the prairies. Logs about eighteen inches in diameter were selected for the floor. These were easily split in halves, and with the smooth surface uppermost joined closely together by a slight trimming with axe or adze, presented a very firm and even attractive surface for the feet.

In the centre of the room, four augur holes were bored in the logs, about three inches in diameter. Stakes were driven firmly into these holes, upon which were placed two pieces of timber, with the upper surfaces hewn smooth, thus constructing a table. In one corner of the cabin, four stakes were driven in a similar

way, about eighteen inches high, with forked tops. Upon these two saplings were laid with smooth pieces of bark stretched across. These were covered with grass or dried leaves, upon which was placed, with the fur upwards, the well-tanned skin of the buffalo or the bear. Thus quite a luxurious bed was constructed, upon which there was often enjoyed as sweet sleep as perhaps is ever found on beds of down. In another corner, some rude shelves were placed, upon which appeared a few articles of tin and ironware. Upon some buck horns over the door was always placed the rifle, ever loaded and ready for use.

A very intelligent emigrant, Dr. Doddridge, gives the following graphic account of his experience in such a log-cabin as we have described, in the remote wilderness. When he was but a child, his father, with a small family, had penetrated these trackless wilds, and in the midst of their sublime solitudes had reared his lonely cabin. He writes:

“My father’s family was small and he took us all with him. The Indian meal which he brought was expended six weeks too soon, so that for that length of time we had to live without bread. The lean venison and the breast of wild turkeys, we were taught to call bread. I remember how narrowly we children watched the growth of the potato tops, pumpkin, and squash vines, hoping from day to day to get something to answer in the place of bread. How delicious was the taste of the young potatoes, when we got them! What a jubilee when we were permitted to pull the young corn for roasting ears! Still more so when it had acquired sufficient hardness to be made into johnny cake by the aid of a tin grater. The furniture of the table consisted of a few pewter

dishes, plates and spoons, but mostly of wooden bowls and trenches and noggins. If these last were scarce, gourds and hard shell squashes made up the deficiency.

"I well remember the first time I ever saw a tea cup and saucer. My mother died when I was six or seven years of age. My father then sent me to Maryland to go to school. At Bedford, the tavern at which my uncle put up was a stone house, and to make the changes still more complete, it was plastered on the inside both as to the walls and ceiling. On going into the dining-room, I was struck with astonishment at the appearance of the house. I had no idea that there was any house in the world that was not built of logs. But here I looked around and could see no logs, and above I could see no joists. Whether such a thing had been made by the hands of man, or had grown so of itself, I could not conjecture. I had not the courage to inquire anything about it. When supper came on, my confusion was worse confounded: A little cup stood in a bigger one with some brownish-looking stuff in it, which was neither milk, hominy, nor broth. What to do with these little cups, and the spoons belonging to them, I could not tell. But I was afraid to ask anything concerning the use of them."

Daniel Boone could see from the door of his cabin, far away in the west, the majestic ridge of the Alleghany mountains, many of the peaks rising six thousand feet into the clouds. This almost impassable wall, which nature had reared, extended for hundreds of leagues, along the Atlantic coast, parallel with that coast, and at an average distance of one hundred and thirty miles from the ocean. It divides the waters which flow into the Atlantic, from

those which run into the Mississippi. The great chain consists of many spurs, from fifty to two hundred miles in breadth, and receives in different localities, different names, such as the Cumberland mountains, the Blue Ridge, etc.

But few white men had ever as yet ascended these summits, to cast a glance at the vast wilderness beyond. The wildest stories were told around the cabin fires, of these unexplored realms, — of the Indian tribes wandering there; of the forests filled with game; of the rivers alive with fishes; of the fertile plains, the floral beauty, the abounding fruit, and the almost celestial clime. These stories were brought to the settlers in the broken language of the Indians, and in the exaggerated tales of hunters, who professed that in the chase they had, from some Pisgah's summit, gazed upon the splendors of this Canaan of the New World.

Thus far, the settlers had rested contented with the sea-board region east of the Alleghanies. They had made no attempt to climb the summits of this great barrier, or to penetrate its gloomy defiles. A dense forest covered alike the mountain cliff and the rocky gorge. Indeed there were but few points at which even the foot of the hunter could pass this chain.

While Daniel Boone was residing in the congenial solitude of his hut, on the banks of the Yadkin; with the grandeur of the wilderness around him in which his soul delighted; with his table luxuriously spread according to his tastes — with venison, bear's meat, fat turkeys, chickens from the prairie, and vegetables from his garden; with comfortable clothing of deerskin, and such cloths as pedlars occasionally brought to his cabin door in ex-

change for furs, he was quite annoyed by the arrival of a number of Scotch families in his region, bringing with them customs and fashions which to Daniel Boone were very annoying. They began to cut down the glorious old forest, to break up the green sward of the prairies, to rear more ambitious houses than the humble home of the pioneer; they assumed airs of superiority, introduced more artificial styles of living, and brought in the hitherto unknown vexation of taxes.

One can easily imagine how restive such a man as Boone must have been under such innovations. The sheriff made his appearance in the lonely hut; the collection of the taxes was enforced by suits at law. Even Daniel Boone's title to his lands was called in question; some of the new comers claiming that their more legal grants lapped over upon the boundaries which Boone claimed. Under these circumstances our pioneer became very anxious to escape from these vexations by an emigration farther into the wilderness. Day after day he cast wistful glances upon the vast mountain barrier piercing the clouds in the distant horizon. Beyond that barrier, neither the sheriff nor the tax-gatherer were to be encountered. His soul, naturally incapable of fear, experienced no dread in apprehension of Indian hostilities, or the ferocity of wild beasts. Even the idea of the journey through these sublime solitudes of an unexplored region, was far more attractive to him than the tour of Europe to a sated millionaire.

Daniel Boone, in imagination, was incessantly visiting the land beyond the mountains, and longing to explore its mysteries. Whether he would find the ocean there or an expanse of lakes and

majestic rivers, or boundless prairies, or the unbroken forest, he knew not. Whether the region were crowded with Indians, and if so, whether they would be found friendly or hostile, and whether game roamed there in greater variety and in larger abundance than on the Atlantic side of the great barrier, were questions as yet all unsolved. But these questions Daniel Boone pondered in silence, night and day.

In the year 1767, a bold hunter by the name of John Finley with two or three companions crossed the mountain range of the Alleghanies into the region beyond, now known as Kentucky.

John Finley and his companions traversed the broad expanse of the Alleghanies, without meeting any signs of human life. The extreme western ridge of these parallel eminences or spurs, has received the name of the Cumberland mountains. Passing through a gorge, which has since then become renowned in peace and war as Cumberland Gap, they entered upon a vast undulating expanse, of wonderful fertility and beauty. In its rivers, its plains, its forests, its gentle eminences, its bright skies and salubrious clime, it presented then, as now, as attractive a residence for man as this globe can furnish. Finley and his companions spent several months roving through this, to them, new Eden. Game of every variety abounded. Through some inexplicable reason, no Indians held possession of the country. But wandering tribes, whose homes and acknowledged territory were far away in the north, the west, and the south, were ever traversing these regions in hunting bands. They often met in bloody encounters. These conflicts were so frequent and so sanguinary,

that this realm subsequently received the appropriate name of "The dark and bloody ground."

After an absence of many months, Finley and his companions returned to North Carolina, with the most glowing accounts of the new country which they had found. Their story of the beauty of those realms was so extravagant, that many regarded them as gross exaggerations. It subsequently appeared, however, that they were essentially true.

Daniel Boone listened eagerly to the recital of John Finley and his associates. The story they told added fuel to the flame of emigration, which was already consuming him. He talked more and more earnestly of his desire to cross the mountains. As these two hardy adventurers, John Finley and Daniel Boone, sat together hour after hour by the fire, talking of the new country which Finley had explored, the hearts of both burned within them again to penetrate those remote realms. To them there were no hardships in the journey.

Gradually they formed a plan for organizing a small party to traverse these beautiful realms in search of a new home. A company of six picked men was formed, and Daniel Boone was chosen their leader. The names of this party were John Finley, John Stewart, Joseph Holden, James Moncey, and William Cool. A journey of many hundred miles was before them. Through the vast mountain barrier, which could only be traversed by circuitous wanderings some hundreds of miles in extent, their route was utterly pathless, and there were many broad and rapid streams to be crossed, which flowed through the valleys between the mountain ridges. It does not appear that Mrs. Boone presented any

obstacle in the way of her husband's embarking in this adventure. Her sons were old enough to assist her in the management of the farm, and game was still to be found in profusion in the silent prairies and sublime forests which surrounded them.

It was a beautiful morning on the first day of May, 1769, when Boone and his companions commenced their adventurous journey. It took them a full month to accomplish the passage of the mountains. Where now there are thriving villages filled with the hum of the industries of a high civilization, there was then but the solitary landscape dotted with herds of buffalo and of deer.

Boone says that in many of these regions he found buffalo roving in companies of several hundreds feeding upon the tender leaves of the canebrake, or browsing upon the smooth and extended meadows. Being far removed from the usual route of the Indian hunters, they were very tame, manifesting no fear at the approach of man.

On the seventh of June, our adventurers, at the close of a day of arduous travel, reached an eminence of the Cumberland Mountains, which gave them a commanding and an almost entrancing view of the region beyond, now known as the State of Kentucky. At the height upon which they stood, the expanse spreading out to the West, until lost in the distant horizon, presented an aspect of nature's loveliness, such as few eyes have ever beheld. The sun was brilliantly sinking, accompanied by a gorgeous retinue of clouds. Majestic forests, wide-spread prairies, and lakes and rivers, gilded by the setting sun, confirmed the truth of the most glowing reports which had been heard from the lips of Finley. An artist has seized upon this incident, which he has transferred

to canvass, in a picture which he has entitled, "Daniel Boone's first view of Kentucky." Engravings have been so multiplied of this painting, that it has become familiar to most eyes.

The peculiar character of these men is developed in the fact, that, rapidly descending the western declivity of the mountains, they came to a beautiful meadow upon the banks of a little stream now called Red River. Here they reared their hut, and here they remained in apparently luxurious idleness all the summer; and here Daniel Boone remained all of the ensuing winter. Their object could scarcely have been to obtain furs, for they could not transport them across the mountains. There were in the vicinity quite a number of salt springs which the animals of the forest frequented in immense numbers. In the brief account which Boone gives of these long months, he simply says:

"In this forest, the habitation of beasts of every kind natural to America, we practiced hunting with great success until the twenty-second day of December following."

On the twenty-second of December, Boone, with one of his companions, John Stewart, set out on one of their exploring tours. There were parts of the country called canebrakes, covered with cane growing so thickly together as to be quite impenetrable to the hunter. Through portions of these the buffaloes had trampled their way in large companies, one following another, opening paths called *streets*. These streets had apparently been trodden for ages. Following these paths, Boone and his companion had advanced several miles from their camp, when suddenly a large party of Indians sprang from their concealment and seized them both as captives. The action was so sudden that there was no

possibility of resistance. In the following words Boone describes this event:

"This day John Stewart and I had a pleasing ramble, but fortune changed the scene in the close of it. We had passed through a great forest, on which stood myriads of trees, some gay with blossoms, others rich with fruits. Nature was here a series of wonders and a fund of delight. Here she displayed her ingenuity and industry in a variety of flowers and fruits, beautifully colored, elegantly shaped, and charmingly flavored; and we were diverted with innumerable animals presenting themselves perpetually to our view.

"In the decline of the day, near Kentucky river, as we ascended the brow of a small hill, a number of Indians rushed out upon us from a thick canebrake and made us prisoners. The time of our sorrow was now arrived. They plundered us of what we had, and kept us in confinement seven days, treating us with common savage usage."

The peculiar character of Boone was here remarkably developed. His whole course of life had made him familiar with the manners and customs of the Indians. They were armed only with bows and arrows. He had the death-dealing rifle which they knew not how to use. His placid temper was never ruffled by elation in prosperity or despair in adversity. He assumed perfect contentment with his lot, cultivated friendly relations with them, taught them many things they did not know, and aided them in all the ways in his power. His rifle ball would instantly strike down the buffalo, when the arrow of the Indian would only goad him to frantic flight.

The Indians admired the courage of their captive, appreciated his skill, and began to regard him as a friend and a helper. They relaxed their vigilance while every day they were leading their prisoners far away from their camp into the boundless West. Boone was so well acquainted with the Indian character as to be well aware that any attempt to escape, if unsuccessful, would cause his immediate death. The Indians, exasperated by what they would deem such an insult to their hospitality, would immediately bury the tomahawk in his brain. Thus seven days and nights passed away.

At the close of each day's travel the Indians selected some attractive spot for the night's encampment or bivouac, according to the state of the weather, near some spring or stream. Here they built a rousing fire, roasted choice cuts from the game they had taken, and feasted abundantly with jokes and laughter, and many boastful stories of their achievements. They then threw themselves upon the ground for sleep, though some one was appointed to keep a watch over their captives. But deceived by the entire contentment and friendliness, feigned by Boone, and by Stewart who implicitly followed the counsel of his leader's superior mind, all thoughts of any attempt of their captives to escape soon ceased to influence the savages.

On the seventh night after the capture, the Indians, gorged with an abundant feast, were all soundly asleep. It was midnight. The flickering fire burned feebly. The night was dark. They were in the midst of an apparently boundless forest. The favorable hour for an attempt to escape had come. But it was full of peril. Failure was certain death, for the Indians deemed

it one of the greatest of all crimes for a captive who had been treated with kindness to attempt to escape. A group of fierce savages were sleeping around, each one of whom accustomed to midnight alarms, was supposed to sleep, to use an expressive phrase, "with one eye open." Boone, who had feigned sound slumber, cautiously awoke his companion who was asleep and motioned him to follow. The rustling of a leaf, the crackling of a twig, would instantly cause every savage to grasp his bow and arrow and spring from the ground. Fortunately the Indians had allowed their captives to retain their guns, which had proved so valuable in obtaining game.

With step as light as the fall of a feather these men with moccasined feet crept from the encampment. After a few moments of intense solicitude, they found themselves in the impenetrable gloom of the forest, and their captors still undisturbed. With vastly superior native powers to the Indian, and equally accustomed to forest life, Boone was in all respects their superior. With the instinct of the bee, he made a straight line towards the encampment they had left, with the locality of which the Indians were not acquainted. The peril which menaced them added wings to their flight. It was mid-winter, and though not very cold in that climate, fortunately for them, the December nights were long.

Six precious hours would pass before the dawn of the morning would struggle through the tree-tops, Till then the bewildered Indians could obtain no clue whatever to the direction of their flight. Carefully guarding against leaving any traces of their footsteps behind them, and watching with an eagle eye lest

they should encounter any other band of savages, they pressed forward hour after hour with sinews apparently as tireless as if they had been wrought of iron. When the fugitives reached their camp they found it plundered and deserted. Whether the red men had discovered it and carried off their companions as prisoners, or whether the white men in a panic had destroyed what they could not remove and had attempted to retreat to the settlements, was never known. It is probable that in some way they perished in the wilderness, and that their fate is to be added to the thousands of tragedies occurring in this world which no pen has recorded.

The intrepid Boone and his companion Stewart seemed, however, to have no idea of abandoning their encampment. But apprehensive that the Indians might have discovered their retreat, they reared a small hut in another spot, still more secret and secure. It is difficult to imagine what motive could have led these two men to remain any longer in these solitudes, five hundred miles from home, exposed to so many privations and to such fearful peril. Notwithstanding the utmost care in husbanding their resources, their powder and lead were rapidly disappearing, and there was no more to be obtained in the wilderness. But here they remained a month, doing apparently nothing, but living luxuriously, according to their ideas of good cheer. The explanation is probably to be found in the fascination of this life of a hunter, which once enjoyed, seems almost irresistible even to those accustomed to all the appliances of a high civilization.

Boone and Stewart were in a boundless, pathless, wilderness

of forests, mountains, rivers and lakes. Their camp could not be reached from the settlements, but by a journey of many weeks, apparently without the smallest clue to its location. And yet the younger brother of Boone, upon whom had been conferred his father's singular baptismal name of Squire, set out with a companion to cross the mountains, in search of Daniel. One day in the latter part of January, Boone and Stewart were quite alarmed in seeing two men approach their camp. They supposed of course that they were Indians, and that they were probably followed by a numerous band. Escape was impossible. Captivity and death seemed certain. But to their surprise and delight, the two strangers proved to be white men; one the brother of Daniel Boone, and the other a North Carolinian who had accompanied him. They brought with them quite a supply of powder and lead; inestimable treasures in the remote wilderness. Daniel, in his Autobiography, in the following simple strain, alludes to this extraordinary occurrence:

“About this time my brother Squire Boone, with another adventurer, who came to explore the country shortly after us, was wandering through the forest, determined to find me if possible, and accidentally found our camp. Notwithstanding the unfortunate circumstances of our company, and our dangerous situation as surrounded by hostile savages, our meeting so fortunately in the wilderness made us reciprocally sensible of the utmost satisfaction. So much does friendship triumph over misfortune, that sorrows and sufferings vanish at the meeting, not only of real friends, but of the most distant acquaintances, and substitute happiness in their room.”

Our hardy pioneer, far more familiar with his rifle than his pen, comments as follows on their condition:

"We were in a helpless, dangerous situation; exposed daily to perils and death, among savages and wild beasts. Not a white man in the country but ourselves. Thus situated, many hundred miles from our families, in the howling wilderness, I believe few would have equally enjoyed the happiness we experienced. I often observed to my brother, 'You see how little nature requires to be satisfied. Felicity, the companion of content, is rather found in our own breasts, than in the enjoyment of external things; and I firmly believe it requires but a little philosophy to make a man happy in whatsoever state he is. This consists in a full resignation to the will of Providence; and a resigned soul finds pleasure in a path strewed with briers and thorns.'"

With his brother, Daniel Boone returned to his humble cabin on the Clinch River in the Alleghany mountains. But emigration to his beautiful Kentucky was still his engrossing thought.

It is not wonderful that a man of such fearless temperament, and a natural turn of mind so poetic and imaginative, should have been charmed beyond expression by a realm whose attractions he had so fully experienced.

The Virginian government now resolved to pour a tide of emigration into these as yet unexplored realms, south of the Ohio. Four hundred acres of land were offered to every individual who would build a cabin, clear a lot of land, and raise a crop of corn. This was called a settlement right. It was not stated how large the clearing should be, or how extensive the corn-field. Several settlements were thus begun in Kentucky,

when there was a new and extraordinary movement which attracted universal attention.

A very remarkable man, named Richard Henderson, appeared in North Carolina. Emerging from the humblest walks of life, and unable even to read until he had obtained maturity, he developed powers of conversational eloquence and administrative ability of the highest order.

The Cherokee Indians claimed the whole country bounded by the Kentucky, the Ohio, and the Cumberland rivers, and we know not how much more territory extending indefinitely to the South and West. Colonel Henderson formed an association called the Transylvania Company. Making a secret journey to the Cherokee country, he met twelve hundred chiefs in council, and purchased of them the whole territory, equal to some European kingdoms, bounded by the above mentioned rivers. For this realm he paid the insignificant sum of ten wagon loads of cheap goods, with a few fire-arms and some spirituous liquors.

Mr. Henderson, to whom the rest of the company seemed to have delegated all their powers, now assumed the position of proprietor, governor, and legislator of his magnificent domain, which he called Transylvania. It seems that Boone accompanied Colonel Henderson to the council of the Cherokee chieftains which was held at Wataga, the southern branch of the Holston River. Boone had explored nearly the whole of this region, and it was upon his testimony that the company relied in endeavoring to purchase these rich and fertile lands. Indeed, it has been said that Boone in his wonderful and perilous explorations was the agent of this secret company.

Colonel Henderson's treaty was made in the month of March, 1775. With characteristic vigor, he immediately made preparations for the settlement of Kentucky. The first thing to be done was to mark out a feasible path through which emigrants might pass, without losing their way, over the mountains and through the wilderness, to the heart of this new Eden. Of all the men in the world, Daniel Boone was the one to map out this route of five hundred miles. He took with him a company of road-makers, and in a few months opened a path which could be traversed by pack-horses, and even by wagons to a place called Boonesville on the Kentucky river, within about thirty miles of the present site of Lexington.

The Indian hunters and warriors, notwithstanding the treaties into which the chieftains of the North and the South had entered, watched the construction of this road with great solicitude. They knew full well that it would ere long secure their expulsion from their ancient hunting grounds. Though no general warfare was organized by the tribes, it was necessary to be constantly on the watch against lawless bands, who were determined to harass the pioneers in every possible way.

Boone immediately commenced upon the left bank of the Kentucky river, which here ran in a westerly direction, the erection of a fort. Their position was full of peril, for the road-makers were but few in number, and Indian warriors to the number of many hundreds might at any time encircle them. Many of these Indians had also obtained muskets from the French in Canada, and had become practiced marksmen.

The fort or fortress consisted of a series of strong log huts,

enclosing a large interior or square. The parallelogram was about two hundred and sixty feet in length and one hundred and fifty in breadth. These cabins, built of logs, were bullet-proof. The intervals between them were filled with stout pieces of timber, about twelve feet high, planted firmly in the ground, in close contact with each other, and sharpened at the top. The fort was built close to the river, with one of its angles almost overhanging the water, so that an abundant supply could be obtained without peril. Each of the corner houses projected a little, so that from the port-holes any Indian could be shot who should approach the walls with ladder or hatchet. This really artistic structure was not completed until the fourteenth day of June. The Indians from a distance watched its progress with dismay. They made one attack, but were easily repelled, though they succeeded in shooting one of the emigrants.

Daniel Boone contemplated the fortress on its completion with much satisfaction. He was fully assured that behind its walls and palisades bold hearts, with an ample supply of ammunition, could repel any assaults which the Indians were capable of making. He now resolved immediately to return to Clinch river, and bring his family out to share with him his new and attractive home.

Having finished this fort Daniel Boone, leaving a sufficient garrison for its security, set out for his home on the Clinch river to bring his wife and family to the beautiful land he so long had coveted for their residence. It seems that his wife and daughters were eager to follow their father to the banks of the Kentucky,

whose charms he had so glowingly described to them. Several other families were also induced to join the party of emigration.

Daniel Boone commenced his journey with his wife and children, and others who joined them, back to Boonesborough in high spirits. It was a long journey of several hundred miles, and to many persons it would seem a journey fraught with great peril, for they were in danger almost every mile of the way, of encountering hostile Indians. But Boone, accustomed to traversing the wilderness, and accompanied by well armed men, felt no more apprehensions of danger than the father of a family would at the present day in traveling by cars from Massachusetts to Pennsylvania.

It was beautiful autumnal weather when the party of pioneers commenced its adventurous tour through the wilderness, to find a new home five hundred miles beyond even the remotest frontiers of civilization. There were three families besides that of Boone, and numbered in all twenty-six men, four women, and four or five boys and girls of various ages. Daniel Boone was the happy leader of this heroic little band.

In due time they all arrived safely at Boonesborough "without having encountered," as Boone writes, "any other difficulties than such as are common to this passage." As they approached the fort, Boone and his family, for some unexplained reason, pressed forward, and entered the fortress a few days in advance of the rest of the party. Perhaps Boone himself had a little pride to have it said, that Mrs. Boone and her daughter were the first of her color and sex that ever stood upon the banks of the wild and beautiful Kentucky.

Soon four settlements were organized called Boonesborough, Harrodsburg, Boiling Spring, and St. Asaph. Colonel Henderson, on the twenty-third of May, 1775, as president or rather sovereign of this extraordinary realm, summoned a legislature consisting of delegates from this handful of pioneers, to meet at his capital, Boonesborough. Henderson presided. Daniel and his brother Squire were delegates from Boonesborough. A clergyman, the Reverend John Leythe, opened the session with prayer. Colonel Henderson made a remarkable and admirable speech. This extraordinary legislature represented only a constituency of one hundred and fifty souls. But the Colonel presented to them very clearly the true republican principle of government. He declared that the only legitimate source of political power is to be found in the will of the people, and added:

“If any doubts remain among you with respect to the force and efficiency of whatever laws you now or hereafter make, be pleased to consider that all power is originally in the people. Make it their interest, therefore, by impartial and beneficent laws, and you may be sure of their inclination to see them enforced.”

And thus began the settlement of Kentucky of which, Governor Moorhead speaking fifty years afterward said: “It is not assuming too much to declare that without Daniel Boone the settlement in all probability could not have been upheld; and the conquest of Kentucky might have been reserved for the emigrants of the nineteenth century.”

THE TRAPPER

KIT CARSON *

CHRISTOPHER CARSON, whose renown as Kit Carson has reached almost every ear in the country was born in Madison county, Kentucky, on the 24th of December, 1809. Large portions of Kentucky then consisted of an almost pathless wilderness, with magnificent forests, free from underbrush, alive with game, and with luxuriant meadows along the river banks, inviting the settler's cabin and the plough.

There were then many Indians traversing those wilds. The fearless emigrants, who ventured to rear their huts in such solitudes, found it necessary ever to be prepared for an attack.

But very little reliance could be placed even in the friendly protestations of the vagabond savages, ever prowling about, and almost as devoid of intelligence or conscience, as the wolves which at midnight were heard howling around the settler's door. The family of Mr. Carson occupied a log cabin, which was bullet-proof, with portholes through which their rifles could command every approach. Women and children were alike taught the use of the rifle, that in case of an attack by any blood-thirsty gang, the whole family might resolve itself into a military garrison. Not a tree or stump was left, within musket shot of the house, behind which an Indian could secrete himself.

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Almost of necessity, under these circumstances, any bright, active boy would become a skilful marksman. A small garden was cultivated where corn, beans and a few other vegetables were raised, but the main subsistence of the family consisted of the game with which forest, meadow and lake were stored. The settler usually reared his cabin upon the banks of some stream alive with fishes. There were no schools to take up the time of the boys; no books to read. Wild geese, ducks and other water fowl, sported upon the bosom of the river or the lake, whose waters no paddle wheel or even keel disturbed. Wild turkeys, quails, and pigeons at times, swept the air like clouds. And then there was the intense excitement of occasionally bringing down a deer, and even of shooting a ferocious grizzly bear or wolf or catamount. The romance of the sea creates a Robinson Crusoe. The still greater romance of the forest creates a Kit Carson. It often makes even an old man's blood thrill in his veins, to contemplate the wild and wondrous adventures, which this majestic continent opened to the pioneers of half a century ago.

Gradually, in Kentucky, the Indians disappeared, either dying off, or pursuing their game in the unexplored realms nearer the setting sun. Emigrants, from the East, in large numbers entered the State. Game, both in forest and meadow, became scarce, and the father of Kit Carson, finding settlers crowding him, actually rearing their huts within two or three miles of his cabin, abandoned his home to find more room in the still more distant West.

Christopher was then the youngest child, a babe but one

year old. The wilderness, west of them, was almost unexplored. But Mr. Carson, at his blazing fireside, had heard from the Indians, and occasionally from some adventurous white hunter, glowing accounts of the magnificent prairies, rivers, lakes and forests in the far West, reposing in the solitude and the silence which had reigned there since the dawn of the creation.

There were no roads through the wilderness. The guide of the emigrants was the setting sun. Occasionally they could take advantage of some Indian trail, trodden hard by the moccasined feet of the savages, in single file, through countless generations. Through such a country, the father of Kit Carson commenced a journey of several hundred miles, with his wife and three or four children, Kit being an infant in arms.

The few white men, some half dozen in number, who had gathered around Mr. Carson, deemed it expedient for self-defense to unite and build a large log cabin, which should be to them both a house and a fort. This building of logs, quite long and but one story high, was pierced, at several points, with portholes, through which the muzzles of the rifles could be thrust. As an additional precaution they surrounded this house with palisades, consisting of sticks of timber, six or eight inches in diameter, and about ten feet high, planted as closely as possible together. These palisades were also pierced with portholes.

With a practiced eye, these men had selected a very beautiful spot for their habitation, in what is now called Howard county, Missouri, just north of the Missouri river. It seems that they had much to fear from the Indians. There were at this time, frequent wars with them, in the more eastern portions of the

continent, and the rumors of these conflicts reached the ears of all the roving tribes, and greatly excited them. It became necessary for the settlers to go upon their hunting excursions with much caution.

Thus fifteen years passed away. Civilization made gradual encroachments. Quite a little cluster of log huts was reared in the vicinity, where the inmates in case of necessity could flee to the fort for protection. Christopher, at fifteen years of age, was an unlettered boy, small in stature, but very fond of the solitude of the forest, and quite renowned as a marksman. He was amiable in disposition, gentle in his manners, and in all respects a good boy. He had a strong character. Whatever he undertook, he quietly and without any boasting performed. With sound judgment, and endowed with singular strength and elasticity, he was even then deemed equal to any man in all the requirements of frontier life.

At a short distance from the fort there was a saddler, and Mr. Carson, with the advice of friends, decided to apprentice his son, now called Kit, to learn that trade. The boy remained in this employment for two weary years. Though faithful to every duty, and gaining the respect and confidence of his employer, the work was uncongenial to him. He longed for the freedom of the wilderness; for the sublime scenes of nature, to which such a life would introduce him; for the exciting chase of the buffalo, and the lucrative pursuits of the trapper, floating on distant streams in the birch canoe, and loading his bark with rich furs, which ever commanded a ready sale.

All these little settlements were clustered around some pro-

tecting fort. A man, who was brought up in the remote West, furnishes the following interesting incident in his own personal experience. It gives a very graphic description of the alarms to which these pioneers were exposed:

“The fort to which my father belonged was three quarters of a mile from his farm. But when this fort went to decay and was unfit for use, a new one was built near our own house. I well remember, when a little boy, the family were sometimes waked up in the dead of night by an express, with the report that the Indians were at hand. The express came softly to the door and by a gentle tapping raised the family. This was easily done, as an habitual fear made us ever watchful, and sensible to the slightest alarm. The whole family were instantly in motion.

“My father seized his gun and other implements of war. My mother waked up and dressed the children as well as she could. Being myself the oldest of the children, I had to take my share of the burdens to be carried to the fort. There was no possibility of getting a horse in the night to aid us. Besides the little children we caught up such articles of clothing and provisions as we could get hold of in the dark, for we durst not light a candle or even stir the fire. All this was done with the utmost dispatch and in the silence of death. The greatest care was taken not to awaken the youngest child.

“To the rest it was enough to say *Indian*, and not a whisper was heard afterward. Thus it often happened that the whole number belonging to a fort, who were in the evening at their homes, were all in their little fortress before the dawn of the next morning. In the course of the next day their household furni-

ture was brought in by men under arms. Some families belonging to each fort were much less under the influence of fear than others. These often, after an alarm had subsided, in spite of every remonstrance, would remove home, while their more prudent neighbors remained in the fort. Such families were denominated *fool-hardy*, and gave no small amount of trouble by creating such frequent necessities of sending runners to warn them of their danger, and sometimes parties of our men to protect them during their removal."

While Kit Carson was impatiently at work on the bench of the harness-maker, feeding his soul with the stories, often greatly exaggerated, of the wonders of scenes and adventures to be encountered in the boundless West, a party of traders came along, who were on the route for Santa Fe. This city, renowned in the annals of the West, was the capital of the Spanish province of New Mexico. It was situated more than a thousand miles from Missouri, and contained a mongrel population of about three thousand souls. Goods from the States could be readily sold there at a profit of one or two hundred per cent. Cotton cloth brought three dollars a yard.

Captain Pike, upon his return from his exploring tour, brought back quite glowing accounts of Santa Fe and its surroundings. It was a long and perilous journey from Missouri. The party was all strongly armed, with their goods borne in packs upon mules and horses. They expected to live almost entirely upon the game they could shoot by the way. Kit, purely from the love of adventure, applied to join them. Gladly was he received. Though but a boy of eighteen, his stable character,

his vigorous strength, and his training in all the mysteries of frontier life, rendered him an invaluable acquisition.

Crossing the plains of the interior of our Continent from the Missouri river to the Rocky mountains, was a very different undertaking half a century ago, from what it is today. The route was then almost entirely unexplored. There were no charts to guide. The bold adventurers knew not where they would find springs of water, where forage for their animals, where they would enter upon verdureless deserts, where they could find fording-places of the broad and rapid rivers which they might encounter on their way.

This is not a forest-covered continent. The vast plains of the interior, whether smooth or undulating or rugged, spread far away for weary leagues, almost treeless. The forest was found mainly skirting the streams. Immense herds of buffaloes, often numbering ten or twenty thousand, grazed upon these rich and boundless pastures. Timid deer and droves of wild horses, almost countless in numbers, here luxuriated in a congenial home. There was scarcely a white man in the land whose eyes had ever beheld the cliffs of the Rocky mountains. And each Indian tribe had its hunting-grounds marked out with considerable precision, beyond which even the boldest braves seldom ventured to wander.

About a score of men started upon this trip. They were thoroughly armed, practiced marksmen, well mounted and each man led a pack mule, heavily laden with goods for the Santa Fe market. Their leader was commander-in-chief, whom all were bound implicitly to obey. He led the company, selecting the

route, and he decided when and where to encamp. The procession followed usually in single file, a long line.

Early in the morning, at the sound of the bugle all sprang from their couches which nature had spread, and they spent no more time at their toilet than did the horse or the cow. After a hurried breakfast they commenced their march. Generally an abundance of game was found on the way. The animals always walked slowly along, being never put to the trot.

At noon the leader endeavored to find some spot near a running stream or a spring, where the animals could find pasture. The resting for a couple of hours gave them time for their dinner, which they had mainly picked up by the way.

An hour or two before sundown the camping ground was selected, the animals were tethered, often in luxuriant grass, and the hardy pioneers, by no means immoderately fatigued by the day's journey, having eaten their supper, which a good appetite rendered sumptuous, spent the time till sleep closed their eyelids in telling stories and singing songs. A very careful guard was set, and the adventurers enjoyed sound sleep till, with the dawn, the bugle call again summoned them. Under ordinary circumstances hardy men of a roving turn of mind, found very great attractions in this adventurous life. They were by no means willing to exchange its excitements for the monotonous labors of the field or the shop.

The company of traders which Kit had joined enjoyed, on the whole, a prosperous expedition. They met with no hostile Indians and, with one exception, encountered nothing which they could deem a hardship.

Having arrived at his journey's end, Kit's love of adventure led him to push on still further in his explorations. About eighty miles northeast of Santa Fe there was another Spanish settlement, weird-like in its semi-barbarous, semi-civilized aspects, with its huts of sun-baked clay, its Catholic priests, its Mexican Indians and its half-breeds. It was a small, lonely settlement, whose population lived mainly, like the Indians, upon cornmeal and the chase. Kit ever kept his trusty rifle with him. His gun and hatchet constituted his purse, furnishing him with food and lodging.

It was a mountainous region; here in one of the dells, Kit came across the solitary hut of a mountaineer by the name of Kin Cade. They took a mutual liking to each other. As Kit could at any day, with his rifle bring in food enough to last a week, the question of board did not come into consideration. It was in the latter part of November that Kit first entered the cabin of this hunter. Here he spent the winter. His bed consisted of husks of corn covered with a buffalo robe, a luxurious couch for a healthy and weary man. Pitch pine knots brilliantly illuminated the hut in the evening. Traps were set to catch animals for their furs. Deer skins were softly tanned and colored for clothing, with ornamental fringes for coats and leggins and moccasins. Kit and his companion Kin were their own tailors.

Thus passed the winter of 1826. Both of the men were very good-natured, and of congenial tastes. They wanted for nothing. When the wind howled amid the crags of the mountains and the storm beat upon their lonely habitation, with fuel in abundance

and a well filled larder, and with no intoxicating drinks or desire for them, they worked upon their garments and other conveniences in the warmth of their cheerful fireside.

Kin Cade was perhaps a Spaniard. He certainly spoke the Spanish language with correctness and fluency. The intelligence of Kit is manifest from the fact that he devoted himself assiduously during the winter to the acquisition of the Spanish language. And his strong natural abilities are evidenced in his having attained, in that short time, quite the mastery of the Spanish tongue. It is often said that Kit Carson was entirely an uneducated man. This is, in one respect, a mistake. The cabin of Kin Cade was his academy, where he pursued his studies vigorously and successfully for a whole winter, graduating in the spring with the highest honors that academy could confer.

We ought not to forget that, in addition to the study of the languages, he also devoted much attention to the study of geography. They had no books, no maps. It is doubtful indeed, whether either Kit or his teacher could read or write. But Kin had been a renowned explorer. He had traversed the prairies, climbed the mountains, followed the courses of the rivers, and paddled over the lakes. With his stick he could draw upon the smoothly trodden floor of his hut, everything that was needful of a chart. There were probably many idle students in Harvard and Yale, who during those winter months did not make as much intellectual progress as Kit Carson made.

In the spring of 1827, Kit again went forth from his winter's retreat into the wilderness world. He became a guide to parties

of traders going to Santa Fe and in the interval pursued the avocation of a trapper.

A gentleman, who was guided over the plains by Kit, writes, "During this journey I have often watched Carson's preparation for the night. A braver man than Kit perhaps never lived. In fact, I doubt if he ever knew what fear was. But with all this he exercised great caution. While arranging his bed, his saddle, which he always used as a pillow, was disposed in such a manner as to form a barricade for his head. His pistols half cocked were placed above it, and his trusty rifle reposed beneath the blanket by his side, where it was not only ready for instant use but perfectly protected from the damp. Except now and then to light his pipe, you never caught Kit, at night, exposing himself to the full glare of the camp fire."

When on the march everything was conducted with military precision. At the early dawn as Kit gave the signal to prepare to start, all were instantly in motion. The mules were brought up; their packs were fastened firmly upon their backs, an operation which required much labor and skill. The mules have a strange instinct which leads them to follow with a sort of fascination a white horse. Thus generally a white horse or mare leads the cavalcade.

At times it was necessary to march long distances without meeting water. One of these dreary stretches was eighty miles long. It was necessary to pass over it as rapidly as possible, day and night almost without resting.

It is said, as illustrative of Kit's promptness of action, that one night an inexperienced guard shouted "Indians." In an

instant Kit was on his feet, pistol in hand. A dark object was approaching him. The loss of a second of time might enable a savage to bury his arrow-head deep in his side and to disappear in the darkness. Like a flash of lightning Kit fired and shot *his mule*. It was a false alarm.

About a hundred and fifty miles north of Santa Fe there was a small collection of huts called Taos, inhabited by trappers and hunters. This pursuit of game for food and fur was the employment which was congenial to him above all others. He directed his steps to Taos and at once entered into an engagement with Mr. Ewing Young, making his cabin headquarters.

Hunting and trapping were somewhat different employments, though perhaps equally exciting. The hunter depended upon his rifle, and was mainly in search of food. Still the robe of the buffalo and the coat of the grizzly bear were very useful in various ways, in the cabin of the hunter, and the softly tanned skin of the deer was invaluable, furnishing every article of clothing shirt, leggins and moccasins. The skins of these animals had also a market value.

But the trapper was in pursuit of furs only. Though the men engaged in this pursuit were occasionally exposed to great hardship and suffering, still, in general they probably had, in the gratification of congenial tastes, a full share of such happiness as this world can furnish.

Let us follow him in one of these adventures.

It is a bright morning of the Indian summer, far along in November. There is a small log cabin on a mound of the wilderness. A dense forest breaks the northern winds. A rippling

stream runs by the door. Beyond lies the prairie rich in verdure and enamelled with gorgeous autumnal flowers. Herds of buffalo are grazing in groups of hundreds, sometimes of thousands, on the broad expanse. Gangs of deer are seen, graceful, beautiful, following in the train of the antlered bucks, and with scent so keen and eyes so piercing that it requires the utmost skill of the hunter to approach them within rifle shot. Clouds of prairie chickens and quails are floating here and there in their short flight. It is the paradise of the hunter. Let no one think this description overdrawn. It would be difficult to exaggerate the loveliness of the flower-spangled prairie on a bright autumnal day. Eden could scarcely have presented scenes more attractive.

Young Carson stands at the door of the cabin with a stout mule before him. The animal is strong and plump, having been feasting upon the wild oats growing luxuriantly around. Carson is packing his mule. His outfit consists of a Mexican blanket, rough, thick and warm; a supply of ammunition; a kettle; possibly a coffee-pot and some coffee, which have been obtained at Santa Fe; several iron traps, some dressed deerskin for replacing clothing and moccasins, a hatchet and a few other similar articles. In addition to his mule he may also take a pony to bear him on the way. Thus, if by accident, one give out, he has another animal to rely upon. And if very successful he may have furs enough to load them both on his return.

His costume consists of a hunting shirt of the soft and pliable deerskin, ornamented with long fringes and often dyed with bright vermilion. Pantaloon of the same material are also ornamented with fringes and porcupine's quills of various colors.

Many a tranquil hour has been beguiled, in the long evenings and when the storm has beaten upon the hut, in fashioning these garments with artistic taste, learned of the Indians. A flexible cap, often of rich fur, covers his head, and moccasins, upon which all the resources of barbaric embroidery have been expended, cover his feet.

His rifle is borne on his left shoulder. His powder horn and bullet pouch hang under his right arm. In his bullet pouch he also carries spare flints, steel and various odds and ends. Beneath the broad belt which encircles his waist there is a large butcher knife in a sheath of buffalo hide. There is a whetstone in a buckskin case made fast to the belt, and also a small hatchet or tomahawk.

Thus accoutred, our young hunter and trapper sets out in search of the most lonely ravine which he can find among the mountains. He would reach if possible, some solitary stream which no white man's eye had ever beheld. He has no road, no trail to guide him. He rides his pony and leads his mule. Over the prairie, through the forest, across the streams, in silence and in a solitude which to him is not lonely, he passes on his way.

Night comes. If pleasant, he unburdens his horse and mule; drives his iron pickets into the ground, to which his animals are attached by ropes about thirty feet long, generally in pastures of rich grass or wild oats; builds a fire, cooks his supper, rolls himself in his blanket and sleeps soundly till morning. If the weather is unpleasant it makes but little difference. He knows exactly what to do. In a short time he constructs a frail but ample shelter and then, with his feet towards the fire, sleeps sweetly

regardless of the storm. His animals have no more need of shelter than have the bears and the buffaloes.

This is the *ordinary* life of the hunter. There are, of course, exceptions when calamity and woe come. A joint may be sprained, a limb broken. Fire may burn, or Indians may come, bringing captivity and torture. But the ordinary life of the hunter, gratifying his natural taste, has many fascinations.

Young Carson, alone with his horse and mule, would journey from fifty to a hundred miles, examining every creek and stream, keeping a sharp lookout for signs of beaver. Having selected his location generally in some valley eight or ten miles in extent, with a winding stream circling through the centre, which he had reason to believe was well stocked with beaver, he would choose a position for his camp. This would be more or less elaborate in its construction, according to the time he intended to spend there. But he would always find some sunny nook, with a southern exposure and a pleasing prospect, near the brook or some spring of sweet water, and if possible, with forest or rock sheltering from the north winds.

In a few hours young Carson would construct his half-faced cabin, as the hunting-camp was called. A large log generally furnished the foundation of the back part of the hut. Four stout stakes were then planted in the ground so as to inclose a space about eight feet square. These stakes were crotched at the ends, so as to support others for the roof. The front was about five feet high, the back not more than four. The whole slope of the roof was from the front to the back. The covering was made of bark or slabs and sometimes of skins. The sides

were covered in a similar way. The whole of the front was open. The smooth ground floor was strewed with fragrant hemlock branches, over which were spread blankets or buffalo robes. In front of the opening the camp fire could be built, or on the one side or the other, in accordance with the wind.

Thus in a few hours young Carson would erect him a home, so cosy and cheerful in its aspect as to be attractive to every eye. Reclining upon mattresses really luxurious in their softness, he could bask in the beams of the sun, circling low in its winter revolutions, or gaze at night upon the brilliant stars, and not unfrequently have spread out before him an extended prospect of as rich natural scenery as ever cheered the eye. He had no anxiety about food. His hook or his rifle supplied him abundantly with what he deemed the richest viands. He knew where were the tender cuts. He knew how to cook them deliciously. And he had an appetite to relish them.

Having thus provided himself with a habitation, he took his traps and, either on foot or on horseback, as the character of the region or the distance to be traversed might render best, followed along the windings of the stream till he came to a beaver dam. He would examine the water carefully to find some shallow which the beavers must pass in crossing from shoal to deep water. Here he would plant his trap, always under water, and carefully adjust the bait. He would then follow on to another dam, and thus proceed till six traps were set, which was the usual number taken on such an expedition.

Early every morning he would mount his horse or mule and take the round of his traps, which generally required a journey

of several miles. The captured animals were skinned on the spot, and the skins only with the tails which the hunters deemed a great luxury as an article of food, were taken to the camp. Then the skin was stretched over a frame work to dry. When dry it was folded into a square sheet, the fur turned inward and a bundle made containing from ten to twenty skins tightly pressed and corded, which was ready for transportation. These skins were then worth about eight dollars per pound.

After an absence of three or four weeks, young Carson would return with his treasures, often several hundred dollars in value, to the rendezvous of Mr. Ewing Young at Taos. Soon again he would set out on another similar expedition.

Soon after Carson returned to the cabin of Mr. Young from one of his trapping expeditions, a party of trappers came back who had set out to explore the valley of the Colorado, in pursuit of furs. At Taos they were west of the Rocky mountains, and the route which they were to take led them still farther in a north-west direction, a distance of three or four hundred miles. It was known that the region was full of roving Indians, and it was not doubted that the savages, if they saw any chance of overpowering the trappers, would do so, and seize their effects, which to the Indians would prove booty of almost inconceivable value. The rifle gave the trappers such an advantage over the Indian, with his bow and arrows, that they never hesitated when upon the open plain in encountering almost any superiority of numbers.

This party of eighteen trappers, with their horses and heavily laden mules, had advanced but a few days' journey, over an almost unexplored region, when they fell in with a powerful tribe

of Indians, who, after a little palaver, seeing their weakness in numbers and the richness of their treasure, attacked them with great fury. The Indians had adroitly selected a spot where they could fight Indian fashion, from behind trees and logs. The battle lasted a whole day. We are not informed how many of either party fell in the fray. But the Indians seemed to swarm around the trappers in countless numbers, and the white men were, greatly to their chagrin, driven back with the loss of several mules.

As the discomfited party returned with their tale of disaster, the ire of Mr. Young was raised. It is a comment upon the number of men then roving the wilderness that Mr. Young was in a short time enabled to organize another party of forty men, to resume the enterprise. It was a motley collection of Spaniards, Americans, Mexicans and half-breeds. Proudly this powerful band, well armed, well mounted and with heavily laden pack mules, commenced its adventurous march, burning with the desire to avenge the insult which the previous expedition had encountered.

Mr. Young had learned highly to prize the capabilities of young Carson, and engaged him to take a prominent position in this company on its hazardous tour. After a march of about a hundred miles, they reached the region occupied by the Indians who had attacked and defeated the former band. The savages, flushed by success, were all ready to renew the conflict. Mr. Young himself was the leader of the party. The Indians, by their gestures and shouts of defiance, gave unmistakable evidence of their eagerness for the fight.

There was some little delay as both parties prepared for the deadly strife. Mr. Young, a veteran in the tactics of the forest, posted his men with great sagacity. He had forty, as we have mentioned in all. Twenty-five of them he hid in ambush. With the other fifteen he cautiously advanced, and at length, as if alarmed, halted. The eminences all in front of them, seemed filled with the plumed warriors. The previous conflict had taught them the powers of the deadly rifle bullet. They kept at a respectful distance, never advancing unless protected by some tree or rock.

But there were hundreds of savages almost surrounding the little band, and making the hills and plains resound with the hideous war-whoop. When the trappers halted and began slowly to draw back, a deafening shout arose from the triumphant foe, and in a simultaneous charge they advanced, but still cautiously, not venturing near enough to discharge their arrows. They were thus drawn along into the trap. When fairly within rifle range, twenty-five unerring marksmen from their concealment, almost at the same instant, opened a death-dealing volley upon the surprised and bewildered warriors. The slaughter was terrible beyond anything they had ever, in their native battles, witnessed before. Twenty-five of their bravest warriors, for the bravest were in the advance, fell dead or severely wounded.

The Indians were thrown into an utter panic. The thunder, the lightning, and the death-bolts had come from they knew not where. With almost the rapidity of thought the rifles were again loaded and the whole united band rushed forward upon the Indians who were now flying wildly in all directions. Instinct

taught them to perform all sorts of gyrations to avoid the bullets which pursued them. They made no attempt to rally, though many of their proud warriors were left behind lifeless or struggling in the convulsions of death.

The power of the rifle was such that, in those days, forty or fifty men never hesitated to engage a whole tribe, though it might number one or two thousand warriors. A man will fight with terrible persistence when he knows that defeat is inevitable death by torture. It is a thousandfold better to fall beneath the arrow, the tomahawk or the war-club, than to be consumed alive amid the jeers and tortures of yelling Indians inspired with demoniac instincts. Thus with the trapper it was always either victory or death.

These hostile warriors were punished with a severity never to be forgotten. The fugitives carried far and wide to other roving tribes the tidings of their disaster. The bold trappers proceeded on their way, encountering no more serious molestation. Smoke upon the distant hills indicated that their march was watched. If a trap was set at any distance from the night's encampment, it was pretty surely stolen. Or if a weary mule was left to recruit, a little behind, intending to bring him up in the morning, before the dawn he disappeared.

The whole party followed slowly down a tributary of the Colorado river, very successfully trapping upon the main stream and its branches, until they reached the head waters of the San Francisco river. They then divided, and Mr. Young with Carson and seventeen others proceeded several hundred miles farther west, to the valley of the Sacramento. Before setting out for this

long journey, as it was uncertain what game they might find by the way, two or three days were devoted to hunting. The skins of three deer were converted into water tanks, which were without difficulty carried by the mules. They were induced to this caution because some friendly Indians had assured them that there was a great destitution of water by the way.

On their march they encountered a tribe of Indians in all their native wildness. They were very friendly though they had apparently never seen a white man before. Perhaps their friendliness was *because* they had never yet met any of the pale faces from whom they subsequently suffered such great wrongs. These Indians presented remarkably fine specimens of the physical man. They were tall, erect and admirably proportioned. Their features were European, their eyes very full and expressive, and the dress of men and women simple in the extreme. They were all splendid horsemen, and often as they entered the camp at full speed on their spirited chargers, it seemed as though the steed and its rider, like the fabled centaur, were but one animal. Their bodies were painted and oiled so as to resemble highly polished mahogany.

The travellers found the information communicated to them by the friendly Indians to be true. For four days they travelled over a dreary, sandy waste, where there were neither streams nor springs. At the camping place each night there was given from the tanks, a small amount of water to each animal and man, but only enough to sustain life. A guard was set over the rest, for should any accident befall it the destruction of the whole party would be the probable consequence.

As they were toiling along the fifth day, painfully through the sand, the mules began to manifest a strange excitement. They pricked up their ears, snuffed the air, then began to rush forward with all the speed their exhausted strength would allow. The sagacious animals had scented water at the distance of nearly a mile. It was a clear running stream, fringed with grass and shrubs. When the first mule reached the water, the remainder were scattered for a great distance along the trail. Here the party encamped and remained for two days to recruit.

The bags of deerskin were again filled with water and the journey was resumed. The route still led over a similar barren region, where both man and beast suffered great privations from the want of water. On the fourth day they came in sight of the splendid valley of the great Colorado. It was with a thrill of delight that they gazed upon its verdure and its luxuriance, which were a hundredfold enhanced from the contrast with the dreary region which they had just traversed.

In their march of eight days through this barren and gameless region, their provisions had become quite exhausted. They chanced to come across some Indians from whom they purchased an old mare. The animal was promptly cut up, cooked and eaten with great gusto. They also obtained, from the same Indians, a small quantity of corn and beans. In the rich meadows of the Colorado our adventurers again found abundance. They spent a few delightful days here, feasting, trapping and hunting. The animals found, for them, a paradise in the luxuriant pastures of wild oats.

Again the journey to the west was resumed. The account

we have of their movements is so meagre that it is impossible to follow with accuracy the route they traversed. They followed for some leagues a river, when suddenly its waters disappeared. They apparently sank beneath the surface of the quicksands. Still there were indications which enabled them to follow the course of the river, until finally it rose again above the surface, and in the open air flowed on to the ocean.

At length they reached the celebrated Catholic Mission of San Gabriel, near the Pacific coast. The Mission was then in a flourishing condition. The statistics, published in 1829, indicate a degree of prosperity which seems almost incredible. More than a thousand Indians were attached to the Mission, and were laboring in its widely-extended fields, tending its herds and cultivating the soil. The poor Indians, who were often half starved upon the plains, found here light employment, shelter and abundant food. The statistics to which we refer, state that the mission had seventy thousand head of cattle, four thousand two hundred horses, four hundred mules, and two hundred and fifty sheep.

These Missions, several of which were established in a line, within about fifty miles of the Pacific coast, belonged to the Spanish government, and were supported by the revenues of the crown. Animals multiplied with great rapidity upon those luxuriant and almost boundless prairies. They ranged sometimes, it was said, spreading out over a hundred thousand acres of wonderfully fertile pastures. There must of course, have been much guess-work in estimating the numbers of these vast herds, generally wandering unattended at their pleasure. But with such supplies of animal and vegetable food there was no fear of want.

The indolent Indians consequently gathered around the Missions in great numbers. They were all fond of show, and not unwillingly became such christians as consists in attending the ceremonies of the church.

The Mission, with its buildings, cultivated fields and vast herds, seemed like the garden of Eden to our weary travellers. They however, remained here but one day, as they were not on a tour of pleasure but in pursuit of furs. A day's travel brought them to another but much smaller Mission, called San Fernando. Without any delay they pushed on towards the west, their object being to enter the valley of the Sacramento river, where they had been told that beavers could be found in great abundance. They expected to reach the banks of this now renowned, but then scarcely known river, after a few days' journey in a northeast direction. They were now in a delightful region. The climate was charming. Brooks of crystal water, and well filled with fishes, often crossed their path. There was abundant forage for their cattle; and forest and prairie seemed alive with game.

They soon reached the banks of the San Joaquin, a lovely stream flowing northerly and emptying into the Sacramento near its mouth. There, finding a very eligible camping site, and many indications of beaver in the stream, Mr. Young halted his party, to rest for a few days, and in the meantime to set their traps. The general character of the scenery around them may be inferred from Mr. Bryant's description of a similar encampment in his overland journey to California.

"Finding here an abundance of grass, we remained the following day for the benefit of our animals. The valley was prob-

ably fifteen miles in length, with a variable width of two or three miles. It was a delightful spot. Wild plants grew in profusion, many-hued flowers studded its surface, and silvery streams, bordered by luxuriant verdure and shrubs, were winding through it. On both sides the mountains towered up by continuous elevations of several thousand feet, exhibiting a succession of rich vegetation, and then craggy and sterile cliffs, capped by virgin snow, the whole forming a landscape of rare combinations of the beautiful and sublime."

After a short rest the trappers continued their journey slowly, setting their traps on the San Joaquin and its tributaries. Pretty soon, much to their surprise, they saw indications that there was another band trapping on the same streams. In a short time they met, and it was found that the other party belonged to the Hudson Bay Company, and was commanded by Peter Ogden.

It is pleasant to record that the two parties, instead of fighting each other as rivals, cordially fraternized. For several weeks they trapped near together, often meeting and ever interchanging the courtesies of brotherly kindness. These men were from Canada. They were veterans in the profession of hunting and trapping, having long been in the employment of the Hudson Bay Company, and having served a regular apprenticeship to prepare them for their difficult and arduous employment. Here again the peculiarity of Kit Carson's character was developed. Instead of assuming that he knew all that was to be known about the wilderness, and the business in which he was engaged, he lost no opportunity of acquiring all the information he could from these strangers. He questioned them very carefully, and his ex-

perience was such as to enable him to ask just such questions as were most important.

There is scarcely a man in America who has not heard the name of Kit Carson. No man can make his name known among the forty millions of this continent, unless there be something extraordinary in his character and achievements. Kit Carson was an extraordinary character. His wide-spread fame was not the result of accident. His achievements were not merely impulsive movements. He was a man of pure mind, of high morality, and intensely devoted to the life-work which he had chosen. His studies during the winter in the cabin of Kin Cade, had made him a proficient in the colloquial Spanish language. This proved to him an invaluable acquisition. He had also gathered and stored away in his retentive memory all that this veteran ranger of the woods could communicate respecting the geography of the Far West, the difficulties to be encountered and the mode of surmounting them. And now he was learning everything that could be learned from these Canadian boatmen and rangers.

Already young Carson had attained eminence. It was often said, "No matter what happens, Kit Carson always knows at the moment exactly what is best to be done."

Both as a hunter and a trapper, though he had not yet attained the age of manhood, he was admitted to be the ablest man in the party. And his native dignity of person and sobriety of manners commanded universal respect. In this lovely valley both parties lived, as trappers, luxuriously. They were very successful with their traps. And deer, elk and antelope were roving about in such thousands, that any number could be easily taken.

The trappers purchased of the Catholic Mission of San Rafael which was near their encampment sixty horses, paying for them in beaver skins, which always had a cash value. These horses were indispensable to the trapper. It required a large number to carry the packs of a successful trapping party. It would be impossible for the trappers to transport the packs upon their own backs. A party of forty trappers would need each a horse to ride. Then generally each man led a spare horse, lest the one he rode should break a limb or in any other way give out in the midst of the wilderness. If the expedition were successful, each trapper would have three or four horses or mules to lead or drive, laden with the packs of skins, the traps, camping utensils and a supply of food for an emergency. Thus a party of forty men would sometimes be accompanied by more than two hundred horses. Horses were cheap, and their food on the rich prairies cost nothing. But it was necessary to guard the animals with the greatest care, for the Indians were continually watching for opportunities to steal them.

Soon after Mr. Young, whose party it will be remembered now consisted of eighteen men, had made his purchase of horses, in preparation for a return, as the animals were feeding on the open prairie, a band of Indians succeeded one night in stealing sixty of them, and with their booty, like the wind they fled towards the valleys of the Snow mountains. Such a cavalcade of horses in one band, travelling over the turf of the prairie, would leave a trail behind which could easily be followed. The number of the Indian thieves was not known, though the bold-

ness of the robbery and their tracks indicated that the band must have been large.

Twelve men were immediately detached to pursue the gang. Young Carson was then appointed leader. There were but fourteen horses left in the camp. Carson, having mounted his twelve men, had the other two horses led, to meet any emergency. Vigorously the pursuit was pressed. There was no difficulty in keeping the track. The Indian with all his cunning was never the equal of the far more intelligent white man. Indeed the ordinary savage was often but a grown-up child.

For more than one hundred miles Carson continued his pursuit before he came up with the robbers. They had already entered the green valleys of the Snow mountains. The eagle eye of the pursuer saw some smoke circling up in the distance. No ordinary eye would have perceived it. Immediately he dismounted his men, and tethered the horses. The rifles were carefully examined, that every one might be loaded, primed, and in perfect order. The band then cautiously pressed forward, led by their boy captain, till they came to the entrance of a wild but lovely glen, where at the distance of perhaps a mile, they saw these savage warriors, enjoying all the luxury of a barbaric encampment. A mountain stream, rippled through the valley. The horses were grazing in the rich pasture. The thieves had killed six of the fat young horses, and having cooked them and feasted to utter repletion, were lounging around, basking in the sun, in the fullness of savage felicity. Little were they aware of the tempest of destruction and death about to burst upon them.

The Indians could not have chosen a more delightful spot

for their encampment and their feast. Neither could they have selected a spot more favorable for the unseen approach of the pursuers. But the savages, having accomplished more than a hundred miles, deemed themselves perfectly safe.

Carson carefully reconnoitred the position, gave minute directions to his men, and they all, with the noiseless, stealthy movement of the panther, worked their way along until they were within rifle distance of their foes. Every man selected his victim and took deliberate aim. The signal was given. The discharge was simultaneous. Twelve bullets struck twelve warriors. Most of them dropped instantly dead. Almost with the rapidity of thought the rifles were loaded, and the little band rushed upon the bewildered, terror-stricken, bleeding savages. The Indians scattered in every direction. Eight were killed outright. Carson had no love of slaughter. Many more, in their flight, might have been struck by the bullet; but they were allowed to escape. All the horses were recovered excepting the six which the Indians had killed.

Great was the rejoicing in the camp when the victorious party returned so abundantly successful. One of the annalists of this extraordinary man speaking of the enterprise, very truthfully writes:

“Carson, though at that day a youth in years and experience, had risen rapidly in the estimation of all, and had excited the admiration and enlisted the confidence of the entire band. When called upon to add his counsel, concerning any doubtful enterprise, his masterly foresight and shrewdness, as well as clearness in attending to details, gave him willing auditors.

“But it was the modest deportment he invariably wore, which won for him the love of his associates. Kit Carson’s power in quickly conceiving the safest plan of action in difficult emergencies, and his bravery, which in his youth, sometimes amounted to rashness, caused his companions to follow his leadership. His courage, promptitude, self-reliance, caution, sympathy and care for the wounded, marked him at once as the master mind. Like the great Napoleon, when he joined the army for his first campaign, he was a hero, in spite of his youth, among men grown grey with experience.”

The highest style of manhood, the most attractive character is that in which the mildness and the delicacy of the woman is combined with the energy and the fearlessness of the man. In Kit Carson we witness a wonderful combination of these two qualities. An acquaintance of the writer, who spent many years of his early life roving through the wilderness of the far West, and who had often met Kit Carson, said he never heard an oath from his lips. Even the rude and profane trappers around him could appreciate the superior dignity of such a character.

It was in The Great Valley, the middle region of California, that Mr. Young and his trappers pursued their vocation. They commenced far south, at the head waters of the San Joaquin, and trapped down that stream, a distance of about one hundred and fifty miles. They then struck the greater flood of the Sacramento, and followed up that stream nearly three hundred and fifty miles. They had now obtained furs enough to load down all the horses and mules at their disposal. They prepared to

return to Santa Fe, where they were sure of a ready market for their furs, which would be sent to Europe for their final sale.

In the meantime most of the rude trappers, seeming to be almost of a different nature from Kit Carson, were indulging in a drunken carouse at Los Angeles. They got into a brawl with the Mexicans. Knives were drawn, wounds inflicted, and one Mexican was killed.

It became necessary to get these men away as soon as possible. Carson was sent forward a day's march, with all who could be collected. The next day Mr. Young followed, having with much difficulty gathered the remainder of the band. Soon the party was reunited, and the men were recovered from their shameful debauch. Then for nine days they vigorously continued their march homeward, when they again reached the banks of the Colorado river, not far from the spot where they had crossed it before.

Here they encamped for a few days, while most of the men ranged the stream for many miles up and down, still very successfully setting their traps. Carson, with half a dozen men, was left to guard the camp. It was a responsible position. Nearly all the horses were there, and all the treasures of furs which they had gathered in their long and laborious excursion. As the animals were turned out to graze, the packs, which were taken from them, were arranged in a circular form so as to enclose quite a space, like a fortress. These bundles of furs not even a bullet could penetrate. Thus Kit Carson reared for himself and men a rampart, as General Jackson protected his troops with cotton bags at New Orleans.

Scarcely was this work completed, when a band of five hundred Indians was seen approaching. As usual, they stopped at a short distance from the fortified camp, and a few of the warriors, laying aside their arms and expressing by words and gestures the utmost friendliness, came forward and were admitted into the camp. They were followed by others. Soon there were enough stalwart savages there easily to overpower, in a hand-to-hand fight, the feeble garrison of but six men. Carson's suspicions were excited, and watching their movements with an eagle eye, he soon discovered that they all had concealed weapons.

Without the slightest apparent alarm he quietly summoned his men, with their rifles, into one corner of the enclosure. Then in his usual soft voice he directed each man to take deliberate aim at some one of the prominent chiefs. He himself presented the muzzle of his rifle within a few yards of the head of the leader of the now astonished and affrighted party. This was all the work of a moment. Then calmly he said to the leader, "Leave this fort instantly or you are dead men." A moment of hesitation on their part, a word of parleying would have been followed by the simultaneous discharge of the rifles, and six of the warriors at least, would have been numbered with the dead. In a moment the fort was cleared, and the savages did not stop until they had got beyond the reach of rifle bullets.

One of these Indians could speak Spanish. Thus Kit Carson again found the inestimable advantage of his winter's studies in the cabin of Kin Cade. The Indians, five hundred in number, might easily, at the expense of the loss of a few lives, have overpowered the white men, and seized all their animals and their



The Trapper

goods. But Carson well knew their habits and that they would never hazard a contest where they must with certainty expect a number of their own warriors to be slain. Friendly relations were opened with the Indians, only two or three being admitted to the fort at a time. The animals were tethered in the rich herbage within the protection of their rifles and were carefully watched, night and day.

In a few days the men who had left the camp on a trapping expedition, returned. The whole united company then followed down the south bank of the Colorado, setting their traps every night, until they reached its tide waters. From that point they struck over east to the river Gila, and trapped up the western banks of that river until they reached the mouth of the San Pedro, a distance of more than two hundred miles.

Their animals now were very heavily laden with furs, and they were in great need of more beasts of burden. The following is the account which is given of the manner in which they obtained a supply. It certainly looks very suspicious. It is not improbable that the Indians, had they any historians, would give a very different version of the story.

"Near the mouth of the San Pedro river they discovered a large herd of horses and mules. On a closer examination they found that they were in possession of a band of Indians, who had formerly given them some of their gratuitous hostilities. Not having forgotten their former troubles with these people, they determined to pay them off in their own coin by depriving them of the herd. A short search sufficed to discover the Indian camp. Without waiting an instant, they put their horses to their speed,

and charged in among the huts. The Indians were so completely taken by surprise, that they became panic-struck, and fled in every direction. They however rallied somewhat and a running fight commenced, which lasted some time, but which did not change matters in favor of the Indians. The entire herd fell into the possession of the trappers.

“On the same evening, after the men had wrapped themselves up in their blankets, and laid down for sleep, and while enjoying their slumbers, a noise reached their ears which sounded very much like distant thunder. But a close application of the sense of hearing showed plainly that an enemy was near at hand. Springing up, with rifle in hand, for generally in the mountains a man’s gun rests in the same blanket with himself, on all sleeping occasions, they sallied forth to reconnoitre, and discovered a few warriors driving along a band of at least two hundred horses. The trappers comprehended instantly that the warriors had been to the Mexican settlement in Sonora, on a thieving expedition, and that the horses had changed hands, with only one party to the bargain. The opportunity to instil a lesson on the savage marauders was too good to be lost.

“They saluted the thieves with a volley from their rifles, which, with the bullets whizzing about their heads and bodies, so astonished them that they seemed almost immediately to forget their stolen property, and to think only of a precipitous flight. In a few moments the whites found themselves masters of the field and also of the property. To return the animals to their owners was an impossibility. Mr. Young, therefore, selected as many of the best horses as he needed for himself and men, and, game be-

ing very scarce, killed two, and dried most of the meat for future use, turning the remainder loose."

Such were the morals of the wilderness. Mr. Young resolved himself into a court, of which he was legislator, judge, jury and executioner. The property of others he could confiscate at pleasure, for his own use. The Indians probably retaliated upon the first band of white men which came within their power. And this retaliation would be deemed an act of wanton savage barbarism demanding the extinction of a tribe.

Continuing their march up the Gila river, trapping all the way, from its head waters they struck across the country to Santa Fe. Here they found a ready market for their furs, at twelve dollars a pound. Their mules were laden down with two thousand pounds. Thus the pecuniary results of the trip amounted to the handsome sum of twenty-four thousand dollars. The trappers, flush with money, returned to Taos. The vagabonds of the party soon squandered their earnings in rioting, and were then eager to set out on another excursion.

THE WILDERNESS HUNTER *

J. B. RUXTON

1845

THE grizzly bear is the fiercest of the feræ naturæ of the mountains. His great strength and wonderful tenacity of life render an encounter with him anything but desirable, and therefore it is a rule with the Indians and white hunters never to attack him unless backed by a strong party. Although, like every other wild animal, he usually flees from man, yet at certain seasons, when maddened by love or hunger, he not unfrequently charges at first sight of a foe; when, unless killed dead, a hug at close quarters is anything but a pleasant embrace, his strong hooked claws stripping the flesh from the bones as easily as a cook peels an onion. Many are the tales of bloody encounters with these animals which the trappers delight to recount to the "greenhorn," to enforce their caution as to the fool-hardiness of ever attacking the grizzly bear.

Some years ago a trapping party was on their way to the mountains, led, I believe, by old Sublette, a well-known captain of the West. Amongst the band was one John Glass, a trapper who had been all his life in the mountains, and had seen, probably, more exciting adventures, and had had more wonderful and

* From "Adventures in Mexico and the Rocky Mountains." John Murray, London, 1847.

hairbreadth escapes, than any of the rough and hardy fellows who make the West their home, and whose lives are spent in a succession of perils and privations. On one of the streams running from the "Black Hills," a range of mountains northward of the Platte, Glass and a companion were one day setting their traps, when, on passing through a cherry-thicket which skirted the stream, the former, who was in advance, descried a large grizzly bear quietly turning up the turf with his nose, searching for yampa-roots or pig-nuts, which there abounded. Glass immediately called his companion, and both, proceeding cautiously, crept to the skirt of the thicket, and, taking steady aim at the animal, whose broadside was fairly exposed at the distance of twenty yards, discharged their rifles at the same instant, both balls taking effect, but not inflicting a mortal wound. The bear, giving a groan of pain, jumped with all four legs from the ground, and, seeing the wreaths of smoke hanging at the edge of the brush, charged at once in that direction, snorting with pain and fury.

"Hurraw, Bill!" roared out Glass, as he saw the animal rushing towards them, "we'll be made 'meat' of as sure as shoot-in'!" and, leaving the tree behind which he had concealed himself, he bolted through the thicket, followed closely by his companion. The brush was so thick, that they could scarcely make their way through, whereas the weight and strength of the bear carried him through all obstructions, and he was soon close upon them.

About a hundred yards from the thicket was a steep bluff, and between these points was a level piece of prairie; Glass saw

that his only chance was to reach this bluff, and, shouting to his companion to make for it, they both broke from the cover and flew like lightning across the open space. When more than half way across, the bear being about fifty yards behind them, Glass, who was leading, tripped over a stone, and fell to the ground, and just as he rose to his feet, the beast, rising on his hind feet, confronted him. As he closed, Glass, never losing his presence of mind, cried to his companion to load up quickly, and discharged his pistol full into the body of the animal, at the same moment that the bear, with blood streaming from its nose and mouth, knocked the pistol from his hand with one blow of its paw, and, fixing his claws deep into his flesh, rolled with him to the ground.

The hunter, notwithstanding his hopeless situation, struggled manfully, drawing his knife and plunging it several times into the body of the beast, which, furious with pain, tore with tooth and claw the body of the wretched victim, actually baring the ribs of the flesh and exposing the very bones. Weak with loss of blood, and with eyes blinded with the blood which streamed from his lacerated scalp, the knife at length fell from his hand, and Glass sank down insensible, and to all appearance dead.

His companion, who, up to this moment, had watched the conflict, which, however, lasted but a few seconds, thinking that his turn would come next, and not having had presence of mind even to load his rifle, fled with might and main back to camp, where he narrated the miserable fate of poor Glass. The captain of the band of trappers, however, despatched the man with a companion back to the spot where he lay, with instructions to remain by him if still alive, or to bury him if, as all supposed he

was, defunct, promising them at the same time a sum of money for so doing.

On reaching the spot, which was red with blood, they found Glass still breathing, and the bear, dead and stiff, actually lying upon his body. Poor Glass presented a horrifying spectacle: the flesh was torn in strips from his chest and limbs, and large flaps strewed the ground; his scalp hung bleeding over his face, which was also lacerated in a shocking manner.

The bear, besides the three bullets which had pierced its body, bore the marks of the fierce nature of Glass's final struggle, no less than twenty gaping wounds in the breast and belly testifying to the gallant defense of the mountaineer.

Imagining that, if not already dead, the poor fellow could not possibly survive more than a few moments, the men collected his arms, stripped him even of his hunting-shirt and moccasins, and, merely pulling the dead bear off the body, mounted their horses, and slowly followed the remainder of the party, saying, when they reached it, that Glass was dead, as probably they thought, and that they had buried him.

In a few days the gloom which pervaded the trappers' camp, occasioned by the loss of a favorite companion, disappeared, and Glass's misfortune, although frequently mentioned over the camp-fire, at length was almost entirely forgotten in the excitement of the hunt and Indian perils which surrounded them.

Months elapsed, the hunt was over, and the party of trappers were on their way to the trading-fort with their packs of beaver. It was nearly sundown, and the round adobe bastions of the mud-built fort were just in sight, when a horseman was seen slowly

approaching them along the banks of the river. When near enough to discern his figure, they saw a lank cadaverous form with a face so scarred and disfigured that scarcely a feature was discernible. Approaching the leading horsemen, one of whom happened to be the companion of the defunct Glass in his memorable bear scrape, the stranger, in a hollow voice, reining in his horse before them, exclaimed, "Hurraw, Bill, my boy! You thought I was 'gone under' that time, did you? But hand me over my horse and gun, my lad; I ain't dead yet by a dam sight!"

What was the astonishment of the whole party, and the genuine horror of Bill and his worthy companion in the burial story, to hear the well-known, though now much altered, voice of John Glass, who had been killed by a grizzly bear months before, and comfortably interred, as the two men had reported, and all had believed!

There he was, however, and no mistake about it; and all crowded round to hear from his lips, how, after the lapse of he knew not how long, he had gradually recovered, and being without arms, or even a butcher-knife, he had fed upon the almost putrid carcase of the bear for several days, until he had regained sufficient strength to crawl, when, tearing off as much of the bear's-meat as he could carry in his enfeebled state, he crept down the river; and suffering excessive torture from his wounds, and hunger, and cold, he made the best of his way to the fort, which was some eighty or ninety miles from the place of his encounter with the bear, and, living the greater part of the way upon roots and berries, he after many, many days, arrived in a

pitiable state, from which he had now recovered, and was, to use his own expression, "as slick as a peeled onion."

A trapper on Arkansa, named Valentine Herring, but better known as "Old Rube," told me that once, when visiting his traps one morning on a stream beyond the mountains, he found one missing, at the same time that he discovered fresh bear "sign" about the banks. Proceeding down the river in search of the lost trap, he heard the noise of some large body breaking through the thicket of plum-bushes which belted the stream. Ensconcing himself behind a rock, he presently observed a huge grizzly bear emerge from the bush and limp on three legs to a flat rock, which he mounted, and then, quietly seating himself, he raised one of his fore paws, on which Rube, to his amazement, discovered his trap tight and fast.

The bear, lifting his iron-gloved foot close to his face, gravely examined it, turning his paw round and round, and quaintly bending his head from side to side, looking at the trap from the corners of his eyes, and with an air of mystery and puzzled curiosity, for he evidently could not make out what the novel and painful appendage could be; and every now and then smelt it and tapped it lightly on the rock. This, however, only paining the animal the more, he would lick the trap, as if deprecating its anger, and wishing to conciliate it.

After watching these curious antics for some time, as the bear seemed inclined to resume his travels, Rube, to regain his trap, was necessitated to bring the bear's cogitations to a close, and, levelling his rifle, shot him dead, cutting off his paw and re-

turning with it to camp, where the trappers were highly amused at the idea of trapping a b'ar.

Near the same spot where Glass encountered his "scrape," some score of Sioux squaws were one day engaged in gathering cherries in a thicket near their village, and had already nearly filled their baskets, when a bear suddenly appeared in the midst, and, with a savage growl, charged amongst them. Away ran the terrified squaws, yelling and shrieking, out of the shrubbery, nor stopped until safely ensconced within their lodges. Bruin, however, preferring fruit to meat, albeit of tender squaws, after routing the petticoats, quietly betook himself to the baskets, which he quickly emptied, and then quietly retired.

Bears are exceedingly fond of plums and cherries, and a thicket of this fruit in the vicinity of the mountains is, at the season when they are ripe, a sure "find" for Mr. Bruin. When they can get fruit they prefer such food to meat, but are, nevertheless, carnivorous animals.

The game, *par excellence*, of the Rocky Mountains, and that which takes precedence in a comestible point of view, is the carnero cimmaron of the Mexicans, the Bighorn or Mountain sheep of the Canadian hunters. This animal, which partakes both of the nature of the deer and goat, resembles the latter more particularly in its habits, and its characteristic liking to lofty, inaccessible points of the mountains, whence it seldom descends to the upland valleys excepting in very severe weather. In size the mountain-sheep is between the domestic animal and the common red deer of America, but more strongly made than the latter. Its colour is a brownish dun (the hair being tipped with a

darker tinge as the animal's age increases), with a whitish streak on the hind quarters, the tail being shorter than a deer's, and tipped with black. The horns of the male are enormous, curved backwards, and often three feet in length with a circumference of twenty inches near the head. The hunters assert that, in descending the precipitous sides of the mountains, the sheep frequently leap from a height of twenty or thirty feet, invariably alighting on their horns, and thereby saving their bones from certain dislocation.

They are even more acute in the organs of sight and smell than the deer; and as they love to resort to the highest and most inaccessible spots, whence a view can readily be had of approaching danger, and particularly as one of the band is always stationed on the most commanding pinnacle of rock as sentinel, whilst the others are feeding, it is no easy matter to get within rifle-shot of the cautious animals. When alarmed they ascend still higher up the mountain: halting now and then on some overhanging crag, and looking down at the object which may have frightened them, they again commence their ascent, leaping from point to point, and throwing down an avalanche of rocks and stones as they bound up the steep sides of the mountain. They are generally very abundant in all parts of the main chain of the Rocky Mountains, but particularly so in the vicinity of the "Parks" and the Bayou Salado, as well as in the range between the upper waters of the Del Norte and Arkansa, called the "Wet Mountain" by the trappers. On the Sierra Madre, or Cordillera of New Mexico and Chihuahua, they are also numerous.

The first mountain-sheep I killed, I got within shot of in rather a curious manner. I had undertaken several unsuccessful hunts for the purpose of procuring a pair of horns of this animal, as well as some skins, which are of excellent quality when dressed, but had almost given up any hope of approaching them, when one day, having killed and butchered a black-tail deer in the mountains, I sat down with my back to a small rock and fell asleep. On awaking, feeling inclined for a smoke, I drew from my pouch a pipe, and flint and steel, and began leisurely to cut a charge of tobacco. Whilst thus engaged I became sensible of a peculiar odour which was wafted right into my face by the breeze, and which, on snuffing it once or twice, I immediately recognized as that which emanates from sheep and goats. Still I never thought that one of the former animals could be in the neighbourhood, for my mule was picketed on the little plateau where I sat, and was leisurely cropping the buffalo-grass which thickly covered it.

Looking up carelessly from my work, as a whiff stronger than before reached my nose, what was my astonishment at seeing five mountain-sheep within ten paces, and regarding me with a curious and astonished gaze! Without drawing a breath, I put out my hand and grasped the rifle, which was lying within reach; but the motion, slight as it was, sufficed to alarm them, and with a loud bleat the old ram bounded up the mountain, followed by the band, and at so rapid a pace that all my attempts to "draw a bead" upon them were ineffectual. When, however, they reached a little plateau about one hundred and fifty yards from where I stood, they suddenly stopped, and, approaching

the edge, looked down at me, shaking their heads, and bleating their displeasure at the intrusion. No sooner did I see them stop than my rifle was at my shoulder, and covering the broad-side of the one nearest to me. An instant after and I pulled the trigger, and at the report the sheep jumped convulsively from the rock, and made one attempt to follow its flying companions; but its strength failed, and, circling round once or twice at the edge of the plateau, it fell over on its side, and, rolling down the steep rock, tumbled dead very near me. My prize proved a very fine young male, but had not a large pair of horns. It was, however, "seal" fat, and afforded me a choice supply of meat, which was certainly the best I had eaten in the mountains, being fat and juicy, and in flavour somewhat partaking both of the domestic sheep and buffalo.

Several attempts have been made to secure the young of these animals and transport them to the States; and, for this purpose, an old mountaineer, one Billy Williams, took with him a troop of milch-goats, by which to bring up the young sheep; but although he managed to take several fine lambs, I believe that he did not succeed in reaching the frontier with one living specimen out of some half-score. The hunters frequently rear them in the mountains; and they become greatly attached to their masters, enlivening the camp with their merry gambols.

The elk, in point of size, ranks next to the buffalo. It is found in all parts of the mountains, and descends not unfrequently far down into the plains in the vicinity of the larger streams. A full-grown elk is as large as a mule, with rather a heavy neck and body, and stout limbs, its feet leaving a track

as large as that of a two-year-old steer. They are dull, sluggish animals, at least in comparison with others of the deer tribe, and are easily approached and killed. In winter they congregate in large herds, often numbering several hundreds; and at that season are fond of traveling, their track through the snow having the appearance of a broad beaten road. The elk requires less killing than any other of the deer tribe (whose tenacity of life is remarkable); a shot anywhere in the fore part of the animal brings it to the ground. On one occasion I killed two with one ball, which passed through the neck of the first, and struck the second, which was standing a few paces distant, through the heart: both fell dead. A deer, on the contrary, often runs a considerable distance, strike it where you will. The meat of the elk is strong flavoured, and more like "poor bull" than venison: it is only eatable when the animal is fat and in good condition; at other times it is strong tasted and stringy.

The antelope, the smallest of the deer tribe, affords the hunter a sweet and nutritious meat, when that of nearly every other description of game, from the poorness and scarcity of the grass during the winter, is barely eatable. They are seldom seen now in very large bands on the grand prairies, having been driven from their old pastures by the Indians and white hunters. The former, by means of "surrounds," an enclosed space formed in one of the passes used by these animals, very often drive into the toils an entire band of antelope of several hundreds, when not one escapes slaughter.

I have seen them on the western sides of the mountains, and in the mountain valleys, in herds of several thousands. They

are exceedingly timid animals, but at the same time wonderfully curious; and their curiosity very often proves their death, for the hunter, taking advantage of this weakness, plants his wiping-stick in the ground, with a cap or red handkerchief on the point, and, concealing himself in the long grass, waits, rifle in hand, the approach of the inquisitive antelope, who, seeing an unusual object in the plain, trots up to it, and coming within range of the deadly tube, pays dearly for his temerity. An antelope, when alone, is one of the stupidest of beasts, and becomes so confused and frightened at sight of a traveling party, that it frequently runs right into the midst of the danger it seeks to avoid.

I had heard most wonderful accounts from the trappers of an animal, the existence of which was beyond all doubt, which, although exceedingly rare, was occasionally met with in the mountains, but, from its supposed dangerous ferocity, and the fact of its being a cross between the devil and a bear, was never molested by the Indians or white hunters, and a wide berth given whenever the animal made its dreaded appearance. Most wonderful stories were told of its audacity and fearlessness; how it sometimes jumps from an overhanging rock on a deer or buffalo, and, fastening on its neck, soon brings it to the ground; how it has been known to leap upon a hunter when passing near its place of concealment, and devour him in a twinkling — often charging furiously into a camp, and playing all sorts of pranks on the goods and chattels of the mountaineers. The general belief was that the animal owes its paternity to the old gentleman himself; but the most reasonable declare it to be a cross between the bear and wolf.

Hunting one day with an old Canadian trapper, he told me that, in a part of the mountains which we were about to visit on the morrow, he once had a battle with a "carcagieu," which lasted upwards of two hours, during which he fired a pouchful of balls into the animal's body, which spat them out as fast as they were shot in. To the truth of this probable [improbable] story he called all the saints to bear witness.

Two days after, as we were toiling up a steep ridge after a band of mountain-sheep, my companion, who was in advance, suddenly threw himself flat behind a rock, and exclaimed in a smothered tone, signalling me with his hand to keep down and conceal myself, "Sacré enfant de Gârce, mais here's von dam carcagieu!"

I immediately cocked my rifle, and, advancing to the rock, and peeping over it, saw an animal, about the size of a large badger, engaged in scraping up the earth about a dozen paces from where we were concealed. Its colour was dark, almost black; its body long, and apparently tailless; and I at once recognized the mysterious beast to be a "glutton." After I had sufficiently examined the animal, I raised my rifle to shoot, when a louder than common "Enfant de Gârce" from my companion alarmed the animal, and it immediately ran off, when I stood up and fired both barrels after it, but without effect; the attempt exciting a derisive laugh from the Canadian, who exclaimed, "Pe gar, may be you got fifty balls; vel, shoot 'em all at de dam carcagieu, and he not care a dam!"

The skins of these animals are considered "great medicine" by the Indians, and will fetch almost any price. They are very



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rarely met with on the plains, preferring the upland valleys and broken ground of the mountains, which afford them a better field for their method of securing game, which is by lying in wait behind a rock, or on the steep bank of a ravine, concealed by a tree or shrub, until a deer or antelope passes underneath, when they spring upon the animal's back, and, holding on with their strong and sharp claws, which they bury in the flesh, soon bring it bleeding to the ground. The Indians say they are purely carnivorous; but I imagine that, like the bear, they not unfrequently eat fruit and roots, when animal food is not to be had.

I have said that the mountain wolves, and, still more so, the coyote of the plains, are less frightened at the sight of man than any other beast. One night, when encamped on an affluent of the Platte, a heavy snow-storm falling at the time, I lay down in my blanket, after first heaping on the fire a vast pile of wood, to burn till morning. In the middle of the night I was awakened by the excessive cold, and, turning towards the fire, which was burning bright and cheerfully, what was my astonishment to see a large grey wolf sitting quietly before it, his eyes closed, and his head nodding in sheer drowsiness! Although I had frequently seen wolves evince their disregard to fires, by coming within a few feet of them to seize upon any scraps of meat which might be left exposed, I had never seen or heard of one approaching so close as to warm his body, and for that purpose alone. However, I looked at him for some moments without disturbing the beast, and closed my eyes and went to sleep, leaving him to the quiet enjoyment of the blaze.

This is not very wonderful when I mention that it is a very

common thing for these animals to gnaw the straps of a saddle on which your head is reposing for a pillow.

When I turned my horse's head from Pike's Peak I quite regretted the abandonment of my mountain life, solitary as it was, and more than once thought of again taking the trail to the Bayou Salado, where I had enjoyed such good sport.

Apart from the feeling of loneliness which any one in my situation must naturally have experienced, surrounded by stupendous works of nature, which in all their solitary grandeur frowned upon me, and sinking into utter insignificance the miserable mortal who crept beneath their shadow; still there was something inexpressibly exhilarating in the sensation of positive freedom from all worldly care, and a consequent expansion of the sinews, as it were, of mind and body, which made me feel elastic as a ball of Indian rubber, and in a state of such perfect *insouciance* that no more dread of scalping Indians entered my mind than if I had been sitting in Broadway, in one of the windows of Astor House. A citizen of the world, I never found any difficulty in investing my resting-place, wherever it might be, with all the attributes of a home; and hailed, with delight equal to that which the artificial comforts of a civilized home would have caused, the, to me, domestic appearance of my hobbled animals, as they grazed around the camp, when I returned after a hard day's hunt. By the way, I may here remark that my *sporting* feeling underwent a great change when I was necessitated to follow and kill game for the support of life, and as a means of subsistence; and the slaughter of deer and buffalo no longer became *sport* when the object was to fill the larder,

and the excitement of the hunt was occasioned by the alternative of a plentiful feast or a banyan; and, although ranking under the head of the most red-hot of sportsmen, I can safely acquit myself of ever wantonly destroying a deer or buffalo unless I was in need of meat; and such consideration for the feræ naturæ is common to all the mountaineers who look to game alone for their support. Although liable to an accusation of barbarism, I must confess that the very happiest moments of my life have been spent in the wilderness of the far West; and I never recall but with pleasure the remembrance of my solitary camp in the Bayou Salado, with no friend near me more faithful than my rifle, and no companions more sociable than my good horse and mules, or the attendant coyote which nightly serenaded us. With a plentiful supply of dry pine-logs on the fire, and its cheerful blaze streaming far up into the sky, illuminating the valley far and near, and exhibiting the animals, with well-filled bellies, standing contentedly at rest over their picket-pins, I would sit cross-legged enjoying the genial warmth, and, pipe in mouth, watch the blue smoke as it curled upwards, building castles in its vapoury wreaths, and, in the fantastic shapes it assumed, peopling the solitude with figures of those far away. Scarcely, however, did I ever wish to change such hours of freedom for all the luxuries of civilized life, and, unnatural and extraordinary as it may appear, yet such is the fascination of the life of the mountain hunter, that I believe not one instance could be adduced of even the most polished and civilized of men, who had once tasted the sweets of its attendant liberty and freedom from every worldly care, not regretting the moment when he exchanged it

for the monotonous life of the settlements, nor sighing, and sighing again, once more to partake of its pleasures and allurements.

Nothing can be more social and cheering than the welcome blaze of the camp fire on a cold winter's night, and nothing more amusing or entertaining, if not instructive, than the rough conversation of the single-minded mountaineers, whose simple daily talk is all of exciting adventure, since their whole existence is spent in scenes of peril and privation; and consequently the narration of their every-day life is a tale of thrilling accidents and hair-breadth 'scapes, which, though simple matter-of-fact to them, appear a startling romance to those who are not acquainted with the nature of the lives led by these men, who, with the sky for a roof and their rifles to supply them with food and clothing, call no man lord or master, and are free as the game they follow.

A hunter's camp in the Rocky Mountains is quite a picture. He does not always take the trouble to build any shelter unless it is in the snow-season, when a couple of deerskins stretched over a willow frame shelter him from the storm. At other seasons he is content with a mere breakwind. Near at hand are two upright poles, with another supported on the top of these, on which is displayed, out of reach of hungry wolf or coyote, meat of every variety the mountains afford. Buffalo *dépouillés*, hams of deer and mountain-sheep, beaver-tails, &c., stock the larder. Under the shelter of the skins hang his powder-horn and bullet-pouch; while his rifle, carefully defended from the damp, is always within reach of his arm. Round the blazing fire the hunters congregate at night, and whilst cleaning their rifles, mak-

ing or mending moccasins, or running bullets, spin long yarns of their hunting exploits, &c.

Some hunters, who have married Indian squaws, carry about with them the Indian lodge of buffalo-skins, which are stretched in a conical form round a frame of poles. Near the camp is always seen the "graining-block," a log of wood with the bark stripped and perfectly smooth, which is planted obliquely in the ground, and on which the hair is removed from the skins to prepare them for being dressed. There are also "stretching-frames," on which the skins are placed to undergo the process of dubbing, which is the removal of the flesh and fatty particles adhering to the skin, by means of the *dubber*, an instrument made of the stock of an elk's horn. The last process is the "smoking," which is effected by digging a round hole in the ground and lighting in it an armful of rotten wood or punk. Three sticks are then planted round the hole, and their tops brought together and tied. The skin is then placed on this frame, and all the holes by which the smoke might escape carefully stopped: in ten or twelve hours the skin is thoroughly smoked and ready for immediate use.

The camp is invariably made in a picturesque locality, for, like the Indian, the white hunter has ever an eye to the beautiful. The broken ground of the mountains, with their numerous tumbling and babbling rivulets, and groves and thickets of shrubs and timber, always afford shelter from the boisterous winds of winter, and abundance of fuel and water. Facing the rising sun the hunter invariably erects his shanty, with a wall of precipitous

rock in rear to defend it from the gusts which often sweep down the gorges of the mountains. Round the camp his animals, well hobbled at night, feed within sight, for nothing does a hunter dread more than a visit from the horse-stealing Indians; and to be "afoot" is the acme of his misery.

THE MOUNTAINEER *

THE ASCENT OF MOUNT FRÉMONT

JOHN C. FRÉMONT

1842

AUGUST 10.—The air at sunrise is clear and pure, and the morning extremely cold, but beautiful. A lofty snow peak of the mountain is glittering in the first rays of the sun, which has not yet reached us. The long mountain wall to the east, rising two thousand feet abruptly from the plain, behind which we see the peaks, is still dark, and cuts clear against the glowing sky. A fog, just risen from the river, lies along the base of the mountain. A little before sunrise, the thermometer was at 35°, and at sunrise 33°. Water froze last night, and fires are very comfortable. The scenery becomes hourly more interesting and grand, and the view here is truly magnificent; but, indeed, it needs something to repay the long prairie journey of a thousand miles. The sun has just shot above the wall, and makes a magical change. The whole valley is glowing and bright, and all the mountain peaks are gleaming like silver. Though these snow mountains are not the Alps, they have their own character of grandeur and magnificence, and will doubtless

* From Frémont's Journal—The First Expedition.

find pens and pencils to do them justice. In the scene before us, we feel how much wood improves a view. The pines on the mountain seemed to give it much additional beauty. I was agreeably disappointed in the character of the streams on this side of the ridge. Instead of the creeks, which description had led me to expect, I find bold, broad streams, with three or four feet of water, and a rapid current. The fork on which we are encamped is upwards of a hundred feet wide, timbered with groves or thickets of the low willow. We were now approaching the loftiest part of the Wind River chain; and I left the valley a few miles from our encampment, intending to penetrate the mountains, as far as possible, with the whole party. We were soon involved in very broken ground, among long ridges covered with fragments of granite. Winding our way up a long ravine, we came unexpectedly in view of a most beautiful lake, set like a gem in the mountains. The sheet of water lay transversely across the direction we had been pursuing; and, descending the steep, rocky ridge, where it was necessary to lead our horses, we followed its banks to the southern extremity. Here a view of the utmost magnificence and grandeur burst upon our eyes. With nothing between us and their feet to lessen the effect of the whole height, a grand bed of snow-capped mountains rose before us, pile upon pile, glowing in the bright light of an August day. Immediately below them lay the lake, between two ridges, covered with dark pines, which swept down from the main chain to the spot where we stood. Here, where the lake glittered in the open sunlight, its banks of yellow sand and the light foliage of aspen groves contrasted well with the gloomy pines. "Never

before," said Mr. Preuss, "in this country or in Europe, have I seen such magnificent, grand rocks." I was so much pleased with the beauty of the place that I determined to make the main camp here, where our animals would find good pasturage, and explore the mountains with a small party of men. Proceeding a little further, we came suddenly upon the outlet of the lake, where it found its way through a narrow passage between low hills. Dark pines, which overhung the stream, and masses of rock, where the water foamed along, gave it much romantic beauty. Where we crossed, which was immediately at the outlet, it is two hundred and fifty feet wide, and so deep that with difficulty we were able to ford it. Its bed was an accumulation of rocks, boulders, and broad slabs, and large angular fragments, among which the animals fell repeatedly.

The current was very swift, and the water cold and of a crystal purity. In crossing this stream, I met with a great misfortune in having my barometer broken. It was the only one. A great part of the interest of the journey for me was in the exploration of these mountains, of which so much had been said that was doubtful and contradictory; and now their snowy peaks rose majestically before me, and the only means of giving them authentically to science, the object of my anxious solicitude by night and day, was destroyed. We had brought this barometer in safety a thousand miles, and broke it almost among the snow of the mountains. The loss was felt by the whole camp. All had seen my anxiety, and aided me in preserving it. The height of these mountains, considered by the hunters and traders the highest in the whole range, had been a theme of constant dis-

cussion among them; and all had looked forward with pleasure to the moment when the instrument, which they believed to be true as the sun, should stand upon the summits and decide their disputes. Their grief was only inferior to my own.

This lake is about three miles long and of very irregular width and apparently great depth, and is the head water of the third New Fork, a tributary to Green River, the Colorado of the West. On the map and in the narrative I have called it Mountain Lake. I encamped on the north side, about three hundred and fifty yards from the outlet. This was the most western point at which I obtained astronomical observations, by which this place, called Bernier's encampment, is made in $110^{\circ} 08' 03''$ west longitude from Greenwich, and latitude $43^{\circ} 49' 49''$. The mountain peaks, as laid down, were fixed by bearings from this and other astronomical points. We had no other compass than the small ones used in sketching the country; but from an azimuth, in which one of them was used, the variation of the compass is 18° east. The correction made in our field work by the astronomical observations indicates that this is a very correct observation.

As soon as the camp was formed, I set about endeavoring to repair my barometer. As I have already said, this was a standard cistern barometer, of Troughton's construction. The glass cistern had been broken about midway; but, as the instrument had been kept in a proper position, no air had found its way into the tube, the end of which had always remained covered. I had with me a number of vials of tolerably thick glass, some of which were of the same diameter as the cistern, and I spent

the day in slowly working on these, endeavoring to cut them of the requisite length; but, as my instrument was a very rough file, I invariably broke them. A groove was cut in one of the trees, where the barometer was placed during the night, to be out of the way of any possible danger; and in the morning I commenced again. Among the powder horns in the camp, I found one which was very transparent, so that its contents could be almost as plainly seen as through glass. This I boiled and stretched on a piece of wood to the requisite diameter, and scraped it very thin, in order to increase to the utmost its transparency. I then secured it firmly in its place on the instrument with strong glue made from a buffalo, and filled it with mercury properly heated. A piece of skin, which had covered one of the vials, furnished a good pocket, which was well secured with strong thread and glue; and then the brass cover was screwed to its place. The instrument was left some time to dry; and, when I reversed it, a few hours after, I had the satisfaction to find it in perfect order, its indications being about the same as on the other side of the lake before it had been broken. Our success in this little incident diffused pleasure throughout the camp; and we immediately set about our preparations for ascending the mountains.

As will be seen, on reference to a map, on this short mountain chain are the head waters of four great rivers of the continent, — namely, the Colorado, Columbia, Missouri, and Platte Rivers. It had been my design, after having ascended the mountains, to continue our route on the western side of the range, and, crossing through a pass at the north-western end of the chain, about thirty

miles from our present camp, return along the eastern slope across the heads of the Yellowstone River, and join on the line to our station of August 7, immediately at the foot of the ridge. In this way, I should be enabled to include the whole chain and its numerous waters in my survey; but various considerations induced me, very reluctantly, to abandon this plan.

I was desirous to keep strictly within the scope of my instructions; and it would have required ten or fifteen additional days for the accomplishment of this object. Our animals had become very much worn out with the length of the journey; game was very scarce; and, though it does not appear in the course of the narrative (as I have avoided dwelling upon trifling incidents not connected with the objects of the expedition), the spirits of the men had been much exhausted by the hardships and privations to which they had been subjected. Our provisions had well-nigh all disappeared. Bread had been long out of the question; and of all our stock we had remaining two or three pounds of coffee and a small quantity of macaroni, which had been husbanded with great care for the mountain expedition we were about to undertake. Our daily meal consisted of dry buffalo meat cooked in tallow; and, as we had not dried this with Indian skill, part of it was spoiled, and what remained of good was as hard as wood, having much the taste and appearance of so many pieces of bark. Even of this, our stock was rapidly diminishing in a camp which was capable of consuming two buffaloes in every twenty-four hours. These animals had entirely disappeared, and it was not probable that we should fall in with them again until we returned to the Sweet Water.

Our arrangements for the ascent were rapidly completed. We were in a hostile country, which rendered the greatest vigilance and circumspection necessary. The pass at the north end of the mountain was generally infested by Blackfeet; and immediately opposite was one of their forts, on the edge of a little thicket, two or three hundred feet from our encampment. We were posted in a grove of beech, on the margin of the lake, and a few hundred feet long, with a narrow *prairillon* on the inner side, bordered by the rocky ridge. In the upper end of this grove we cleared a circular space about forty feet in diameter, and with the felled timber and interwoven branches surrounded it with a breast-work five feet in height. A gap was left for a gate on the inner side, by which the animals were to be driven in and secured, while the men slept around the little work. It was half hidden by the foliage, and, garrisoned by twelve resolute men, would have set at defiance any band of savages which might chance to discover them in the interval of our absence. Fifteen of the best mules, with fourteen men, were selected for the mountain party. Our provisions consisted of dried meat for two days, with our little stock of coffee and some macaroni. In addition to the barometer and a thermometer I took with me a sextant and spy-glass, and we had, of course, our compasses. In charge of the camp I left Brenier, one of my most trustworthy men, who possessed the most determined courage.

August 12. — Early in the morning we left the camp, fifteen in number, well armed, of course, and mounted on our best mules. A pack animal carried our provisions, with a coffee-pot and kettle and three or four tin cups. Every man had a blanket

strapped over his saddle, to serve for his bed, and the instruments were carried by turns on their backs. We entered directly on rough and rocky ground, and, just after crossing the ridge, had the good fortune to shoot an antelope. We heard the roar, and had a glimpse of a waterfall as we rode along; and, crossing in our way two fine streams, tributary to the Colorado, in about two hours' ride we reached the top of the first row or range of the mountains. Here, again, a view of the most romantic beauty met our eyes. It seemed as if, from the vast expanse of uninteresting prairie we had passed over, Nature had collected all her beauties together in one chosen place. We were overlooking a deep valley, which was entirely occupied by three lakes, and from the brink the surrounding ridges rose precipitously five hundred and a thousand feet, covered with the dark green of the balsam pine, relieved on the border of the lake with the light foliage of the aspen. They all communicated with each other; and the green of the waters, common to mountain lakes of great depth, showed that it would be impossible to cross them. The surprise manifested by our guides when these impassable obstacles suddenly barred our progress proved that they were among the hidden treasures of the place, unknown even to the wandering trappers of the region. Descending the hill, we proceeded to make our way along the margin to the southern extremity. A narrow strip of angular fragments of rock sometimes afforded a rough pathway for our mules; but generally we rode along the shelving side, occasionally scrambling up, at a considerable risk of tumbling back into the lake.

The slope was frequently 60°. The pines grew densely to-

gether, and the ground was covered with the branches and trunks of trees. The air was fragrant with the odor of the pines; and I realized this delightful morning the pleasure of breathing that mountain air which makes a constant theme of the hunter's praise, and which now made us feel as if we had all been drinking some exhilarating gas. The depths of this unexplored forest were a place to delight the heart of a botanist. There was a rich undergrowth of plants and numerous gay-colored flowers in brilliant bloom. We reached the outlet at length, where some freshly barked willows that lay in the water showed that beaver had been recently at work. There were some small brown squirrels jumping about in the pines and a couple of large mallard ducks swimming about in the stream.

The hills on this southern end were low, and the lake looked like a mimic sea as the waves broke on the sandy beach in the force of a strong breeze. There was a pretty open spot, with fine grass for our mules; and we made our noon halt on the beach, under the shade of some large hemlocks. We resumed our journey after a halt of about an hour, making our way up the ridge on the western side of the lake. In search of smoother ground, we rode a little inland, and, passing through groves of aspen, soon found ourselves again among the pines. Emerging from these, we struck the summit of the ridge above the upper end of the lake.

We had reached a very elevated point; and in the valley below and among the hills were a number of lakes at different levels, some two or three hundred feet above others, with which they communicated by foaming torrents. Even to our great

height, the roar of the cataracts came up; and we could see them leaping down in lines of snowy foam. From this scene of busy waters, we turned abruptly into the stillness of a forest, where we rode among the open bolls of the pines over a lawn of verdant grass, having strikingly the air of cultivated grounds. This led us, after a time, among masses of rock, which had no vegetable earth but in hollows and crevices, though still the pine forest continued. Toward evening we reached a defile, or rather a hole in the mountains, entirely shut in by dark pine-covered rocks.

A small stream, with a scarcely perceptible current, flowed through a level bottom of perhaps eighty yards' width, where the grass was saturated with water. Into this the mules were turned, and were neither hobbled nor picketed during the night, as the fine pasturage took away all temptation to stray; and we made our bivouac in the pines. The surrounding masses were all of granite. While supper was being prepared, I set out on an excursion in the neighborhood, accompanied by one of my men. We wandered about among the crags and ravines until dark, richly repaid for our walk by a fine collection of plants, many of them in full bloom. Ascending a peak to find the place of our camp, we saw that the little defile in which we lay communicated with the long green valley of some stream, which, here locked up in the mountains, far away to the south, found its way in a dense forest to the plains.

Looking along its upward course, it seemed to conduct by a smooth gradual slope directly toward the peak, which, from long consultation as we approached the mountain, we had decided to



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be the highest of the range. Pleased with the discovery of so fine a road for the next day, we hastened down to the camp, where we arrived just in time for supper. Our table service was rather scant; and we held the meat in our hands, and clean rocks made good plates on which we spread our macaroni. Among all the strange places on which we had occasion to encamp during our long journey, none have left so vivid an impression on my mind as the camp of this evening. The disorder of the masses which surrounded us, the little hole through which we saw the stars overhead, the dark pines where we slept, and the rocks lit up with the glow of our fires made a night picture of very wild beauty.

August 13. — The morning was bright and pleasant, just cool enough to make exercise agreeable; and we soon entered the defile I had seen the preceding day. It was smoothly carpeted with a soft grass and scattered over with groups of flowers, of which yellow was the predominant color. Sometimes we were forced by an occasional difficult pass to pick our way on a narrow ledge along the side of the defile, and the mules were frequently on their knees; but these obstructions were rare, and we journeyed on in the sweet morning air, delighted at our good fortune in having found such a beautiful entrance to the mountains. This road continued for about three miles, when we suddenly reached its termination in one of the grand views which at every turn meet the traveller in this magnificent region. Here the defile up which we had travelled opened out into a small lawn, where, in a little lake, the stream had its source.

There were some fine *asters* in bloom, but all the flowering

plants appeared to seek the shelter of the rocks and to be of lower growth than below, as if they loved the warmth of the soil, and kept out of the way of the winds. Immediately at our feet a precipitous descent led to a confusion of defiles, and before us rose the mountains. It is not by the splendor of far-off views, which have lent such a glory to the Alps, that these impress the mind, but by a gigantic disorder of enormous masses and a savage sublimity of naked rock in wonderful contrast with innumerable green spots of a rich floral beauty shut up in their stern recesses. Their wildness seems well suited to the character of the people who inhabit the country.

I determined to leave our animals here and make the rest of our way on foot. The peak appeared so near that there was no doubt of our returning before night; and a few men were left in charge of the mules, with our provisions and blankets. We took with us nothing but our arms and instruments, and, as the day had become warm, the greater part left our coats. Having made an early dinner, we started again. We were soon involved in the most ragged precipices, nearing the central chain very slowly, and rising but little. The first ridge hid a succession of others; and when, with great fatigue and difficulty, we had climbed up five hundred feet, it was but to make an equal descent on the other side. All these intervening places were filled with small deep lakes, which met the eye in every direction, descending from one level to another, sometimes under bridges formed by huge fragments of granite, beneath which was heard the roar of the water. These constantly obstructed our path, forcing us to make long détours, frequently obliged to retrace our steps, and

frequently falling among the rocks. Maxwell was precipitated toward the face of a precipice, and saved himself from going over by throwing himself flat on the ground. We clambered on, always expecting with every ridge that we crossed to reach the foot of the peaks, and always disappointed, until about four o'clock, when, pretty well worn out, we reached the shore of a little lake in which there was a rocky island. We remained here a short time to rest, and continued on around the lake, which had in some places a beach of white sand, and in others was bound with rocks, over which the way was difficult and dangerous, as the water from innumerable springs made them very slippery.

By the time we had reached the further side of the lake, we found ourselves all exceedingly fatigued, and, much to the satisfaction of the whole party, we encamped. The spot we had chosen was a broad, flat rock, in some measure protected from the winds by the surrounding crags, and the trunks of fallen pines afforded us bright fires. Near by was a foaming torrent which tumbled into the little lake about one hundred and fifty feet below us, and which, by way of distinction, we have called Island Lake. We had reached the upper limit of the piney region; as above this point no tree was to be seen, and patches of snow lay everywhere around us on the cold sides of the rocks. The flora of the region we had traversed since leaving our mules was extremely rich, and among the characteristic plants the scarlet flowers of the *Dodecatheon dentatum* everywhere met the eye in great abundance. A small green ravine, on the edge of which we were encamped, was filled with a profusion of alpine plants.

in brilliant bloom. From barometrical observations made during our three days' sojourn at this place, its elevation above the Gulf of Mexico is 10,000 feet. During the day we had seen no sign of animal life; but among the rocks here we heard what was supposed to be the bleat of a young goat, which we searched for with hungry activity, and found to proceed from a small animal of a gray color, with short ears and no tail, — probably the Siberian squirrel. We saw a considerable number of them, and, with the exception of a small bird like a sparrow, it is the only inhabitant of this elevated part of the mountains. On our return we saw below this lake large flocks of the mountain goat. We had nothing to eat to-night. Lajeunesse with several others took their guns and sallied out in search of a goat, but returned unsuccessful. At sunset the barometer stood at 20.522, the attached thermometer 50°. Here we had the misfortune to break our thermometer, having now only that attached to the barometer. I was taken ill shortly after we had encamped, and continued so until late in the night, with violent headache and vomiting. This was probably caused by the excessive fatigue I had undergone and want of food, and perhaps also in some measure by the rarity of the air. The night was cold, as a violent gale from the north had sprung up at sunset, which entirely blew away the heat of the fires. The cold and our granite beds had not been favorable to sleep, and we were glad to see the face of the sun in the morning. Not being delayed by any preparation for breakfast, we set out immediately.

On every side as we advanced was heard the roar of waters and of a torrent, which we followed up a short distance until it

expanded into a lake about one mile in length. On the northern side of the lake was a bank of ice, or rather of snow covered with a crust of ice. Carson¹ had been our guide into the mountains, and agreeably to his advice we left this little valley and took to the ridges again, which we found extremely broken and where we were again involved among precipices. Here were ice fields; among which we were all dispersed, seeking each the best path to ascend the peak. Mr. Preuss attempted to walk along the upper edge of one of these fields, which sloped away at an angle of about twenty degrees; but his feet slipped from under him, and he went plunging down the plane. A few hundred feet below, at the bottom, were some fragments of sharp rock, on which he landed, and, though he turned a couple of somersets, fortunately received no injury beyond a few bruises. Two of the men, Clément Lambert and Descoteaux, had been taken ill, and lay down on the rocks a short distance below; and at this point I was attacked with headache and giddiness, accompanied by vomiting, as on the day before. Finding myself unable to proceed, I sent the barometer over to Mr. Preuss, who was in a gap two or three hundred yards distant, desiring him to reach the peak, if possible, and take an observation there. He found himself unable to proceed further in that direction, and took an observation where the barometer stood at 19.401, attached thermometer 50° in the gap. Carson, who had gone over to him, succeeded in reaching one of the snowy summits of the main ridge, whence he saw the peak towards which all our efforts had been directed towering eight or ten hundred feet into the air

¹ Kit Carson, the celebrated scout.

above him. In the mean time, finding myself grow rather worse than better, and doubtful how far my strength would carry me, I sent Basil Lajeunesse with four men back to the place where the mules had been left.

We were now better acquainted with the topography of the country; and I directed him to bring back with him, if it were in any way possible, four or five mules, with provisions and blankets. With me were Maxwell and Ayer; and, after we had remained nearly an hour on the rock, it became so unpleasantly cold, though the day was bright, that we set out on our return to the camp, at which we all arrived safely, straggling in one after the other. I continued ill during the afternoon, but became better towards sundown, when my recovery was completed by the appearance of Basil and four men, all mounted. The men who had gone with him had been too much fatigued to return, and were relieved by those in charge of the horses; but in his powers of endurance Basil resembled more a mountain goat than a man. They brought blankets and provisions, and we enjoyed well our dried meat and a cup of good coffee. We rolled ourselves up in our blankets, and, with our feet turned to a blazing fire, slept soundly until morning.

August 15. — It had been supposed that we had finished with the mountains; and the evening before it had been arranged that Carson should set out at daylight, and return to breakfast at the Camp of the Mules, taking with him all but four or five men, who were to stay with me and bring back the mules and instruments. Accordingly, at the break of day they set out. With Mr. Preuss and myself remained Basil Lejeunesse, Clément Lam-

bert, Janisse, and Descoteaux. When we had secured strength for the day by a hearty breakfast, we covered what remained, which was enough for one meal, with rocks, in order that it might be safe from any marauding bird, and, saddling our mules, turned our faces once more towards the peaks. This time we determined to proceed quietly and cautiously, deliberately resolved to accomplish our object, if it were within the compass of human means. We were of opinion that a long defile which lay to the left of yesterday's route would lead us to the foot of the main peak. Our mules had been refreshed by the fine grass in the little ravine at the island camp, and we intended to ride up the defile as far as possible, in order to husband our strength for the main ascent. Though this was a fine passage, still it was a defile of the most rugged mountains known, and we had many a rough and steep slippery place to cross before reaching the end. In this place the sun rarely shone. Snow lay along the border of the small stream which flowed through it, and occasional icy passages made the footing of the mules very insecure; and the rocks and ground were moist with the trickling waters in this spring of mighty rivers. We soon had the satisfaction to find ourselves riding along the huge wall which forms the central summits of the chain. There at last it rose by our sides, a nearly perpendicular wall of granite, terminating 2,000 to 3,000 feet above our heads in a serrated line of broken, jagged cones. We rode on until we came almost immediately below the main peak, which I denominated the Snow Peak, as it exhibited more snow to the eye than any of the neighboring summits. Here were three small lakes of a green color, each of perhaps a thousand yards in diameter, and

apparently very deep. These lay in a kind of chasm; and, according to the barometer, we had attained but a few hundred feet above the Island Lake. The barometer here stood at 20.450, attached thermometer 70°.

We managed to get our mules up to a little bench about a hundred feet above the lakes, where there was a patch of good grass, and turned them loose to graze. During our rough ride to this place, they had exhibited a wonderful surefootedness. Parts of the defile were filled with angular, sharp fragments of rock, — three or four and eight or ten feet cube, — and among these they had worked their way, leaping from one narrow point to another, rarely making a false step, and giving us no occasion to dismount. Having divested ourselves of every unnecessary encumbrance, we commenced the ascent. This time, like experienced travellers, we did not press ourselves, but climbed leisurely, sitting down as soon as we found breath beginning to fail. At intervals we reached places where a number of springs gushed from the rocks, and about 1,800 feet above the lakes came to the snow line. From this point our progress was uninterrupted climbing. Hitherto I had worn a pair of thick moccasins, with soles of *par-flèche*; but here I put on a light thin pair, which I had brought for the purpose, as now the use of our toes became necessary to a further advance. I availed myself of a sort of comb of the mountain, which stood against the wall like a buttress, and which the wind and the solar radiation, joined to the steepness of the smooth rock, had kept almost entirely free from snow. Up this I made my way rapidly. Our cautious method of advancing in the outset had spared my strength; and, with the exception of a

slight disposition to headache, I felt no remains of yesterday's illness. In a few minutes we reached a point where the buttress was overhanging, and there was no other way of surmounting the difficulty than by passing around one side of it, which was the face of a vertical precipice of several hundred feet.

Putting hands and feet in the crevices between the blocks, I succeeded in getting over it, and, when I reached the top, found my companions in a small valley below. Descending to them, we continued climbing, and in a short time reached the crest. I sprang upon the summit, and another step would have precipitated me into an immense snow field five hundred feet below. To the edge of this field was a sheer icy precipice; and then, with a gradual fall, the field sloped off for about a mile, until it struck the foot of another lower ridge. I stood on a narrow crest, about three feet in width, with an inclination of about 20° N. 51° E. As soon as I had gratified the first feelings of curiosity, I descended, and each man ascended in his turn; for I would only allow one at a time to mount the unstable and precarious slab, which it seemed a breath would hurl into the abyss below. We mounted the barometer in the snow of the summit, and, fixing a ramrod in a crevice, unfurled the national flag to wave in the breeze where never flag waved before. During our morning's ascent we had met no sign of animal life except the small, sparrow-like bird already mentioned. A stillness the most profound and a terrible solitude forced themselves constantly on the mind as the great features of the place. Here on the summit where the stillness was absolute, unbroken by any sound, and the solitude complete, we thought ourselves beyond the region of

animated life; but, while we were sitting on the rock, a solitary bee (*bromus*, *the humble bee*) came winging his flight from the eastern valley, and lit on the knee of one of the men.

It was a strange place — the icy rock and the highest peak of the Rocky Mountains — for a lover of warm sunshine and flowers; and we pleased ourselves with the idea that he was the first of his species to cross the mountain barrier, a solitary pioneer to foretell the advance of civilization. I believe that a moment's thought would have made us let him continue his way unharmed; but we carried out the law of this country, where all animated nature seems at war, and, seizing him immediately, put him in at least a fit place, — in the leaves of a large book, among the flowers we had collected on our way. The barometer stood at 18.293, the attached thermometer at 44°, giving for the elevation of this summit 13,570 feet above the Gulf of Mexico, which may be called the highest flight of the bee. It is certainly the highest known flight of that insect. From the description given by Mackenzie of the mountains where he crossed them with that of a French officer still farther to the north and Colonel Long's measurements to the south, joined to the opinion of the oldest traders of the country, it is presumed that this is the highest peak of the Rocky Mountains. The day was sunny and bright, but a slight shining mist hung over the lower plains, which interfered with our view of the surrounding country. On one side we overlooked innumerable lakes and streams, the spring of the Colorado of the Gulf of California; and on the other was the Wind River Valley, where were the heads of the Yellowstone branch of the Missouri. Far to the north we just could discover

the snowy heads of the *Trois Tetons*, where were the sources of the Missouri and Columbia Rivers; and at the southern extremity of the ridge the peaks were plainly visible, among which were some of the springs of the Nebraska or Platte River. Around us the whole scene had one main striking feature, which was that of terrible convulsion. Parallel to its length, the ridge was split into chasms and fissures, between which rose the thin, lofty walls, terminated with slender minarets and columns, which could be clearly discerned from the camp on Island Lake. According to the barometer, the little crest of the wall on which we stood was three thousand five hundred and seventy feet above that place and two thousand seven hundred and eighty above the little lakes at the bottom, immediately at our feet. Our camp at the Two Hills (an astronomical station) bore south 3° east, which with a bearing afterward obtained from a fixed position enabled us to locate the peak. The bearing of the *Trois Tetons* was north 50° west, and the direction of the central ridge of the Wind River Mountains south 39° east. The summit rock was gneiss, succeeded by sienitic gneiss. Sienite and feldspar succeeded in our descent to the snow line, where we found a feldspathic granite. I had remarked that the noise produced by the explosion of our pistols had the usual degree of loudness, but was not in the least prolonged, expiring almost instantaneously. Having now made what observations our means afforded, we proceeded to descend. We had accomplished an object of laudable ambition, and beyond the strict order of our instructions. We had climbed the loftiest peak of the Rocky Mountains, and looked down upon the snow a thousand feet below, and, standing where never

human foot had stood before, felt the exultation of first explorers. It was about two o'clock when we left the summit; and, when we reached the bottom, the sun had already sunk behind the wall, and the day was drawing to a close. It would have been pleasant to have lingered here and on the summit longer; but we hurried away as rapidly as the ground would permit, for it was an object to regain our party as soon as possible, not knowing what accident the next hour might bring forth.

We reached our deposit of provisions at nightfall. Here was not the inn which awaits the tired traveller on his return from Mont Blanc, or the orange groves of South America, with their refreshing juices and soft, fragrant air; but we found our little *cache* of dried meat and coffee undisturbed. Though the moon was bright, the road was full of precipices, and the fatigue of the day had been great. We therefore abandoned the idea of re-joining our friends, and lay down on the rock, and in spite of the cold slept soundly.

THE PROSPECTOR

THE DAYS OF '49

CHARLES PETTIGREW

IN the year 1839, while California was still a part of the Mexican Republic, there appeared before the Governor at Monterey, a man named Johann August Sutter, asking for a grant of land on which he proposed to found a colony. Though born in Baden, Germany, his parents were Swiss, and when a young man he served as captain in the Swiss army, and later was in business, but failed. He then came to America, and crossing to the Pacific Coast on the Oregon trail, he rambled about the Northwest, went to Honolulu, and finally landed at Yerba Buena (San Francisco), going from there to Monterey. Governor Alvarado, in answer to his request for a grant of land, told him that he must first become a citizen of Mexico, then select the land for which he wished a grant, and come back to him in a year, when perhaps his naturalization papers would be issued, and a grant of the land given him.

Sutter acted as directed, and was not only made a Mexican citizen and given a grant of the land he had selected but was also made an official of the government, and *alcalde* (mayor with judicial powers), with jurisdiction over a territory running eighty-

five miles northward along the Sacramento river from near the place where the American river joins it, and eastward from the Sacramento a distance varying from ten to twelve miles, Sutter's grant being eleven square leagues (48,000 acres) within that territory. Having previously selected his location, he at once began to build a fort with adobe brick (bricks of sun dried clay), with walls three feet thick and eighteen feet high, enclosing a space five hundred feet long, by a hundred feet wide. The walls were pierced at suitable places with loopholes for muskets, and at the southeast and northwest corners of the enclosure were towers or bastions in which small cannon were mounted, so that they commanded the four sides of the enclosure. In this fort Sutter's house, together with quarters for his people, and all necessary storehouses and workshops were located. The fort stood on high ground, on the south bank of the American river, about a quarter of a mile from the water's edge, and about a mile from the Sacramento river. His original company of colonists consisted of five white men, ten Indians, two of whom were squaws, and a large bulldog. That Captain Sutter chose his location wisely was strongly confirmed in 1854, when the site of his fort was chosen as the capital of the newly organized State of California; and now the great city of Sacramento, with its population of 75,000, has risen on the place of his selection. He named the place New Helvetia, to remind him of his native Switzerland; but somehow that name did not stick, and it was popularly known as Sutter's Fort, the site of which has long since been absorbed by the great city. But the grateful citizens of Sacramento have preserved and restored the ruins of the old

fort in one of their parks, so that its memory may be forever cherished.

During the five years that intervened between the time he became a citizen of the Mexican Republic and the ceding of the whole territory of Alta California by Mexico to the United States, Sutter was lord of all he surveyed. He had studied Dr. McLaughlin's (the agent of the Hudson Bay Company) method of handling the Indians, and he followed it strictly. He treated them kindly, without fear, paying them exactly as agreed for their services, and punishing them when they stole or disturbed the peace and order of the camp; and if they showed any disposition to act against him in force, he easily frightened them by the use of his three cannon, which always terrified them.

Sutter's Fort soon became the rendezvous for all the trappers, hunters and wandering people of all sorts in the surrounding territory, besides the emigrants that all the time came from the East over the Oregon trail, the fort being its terminal.

When the territory came under the Stars and Stripes, Sutter swore allegiance to the flag and anglicized his name, becoming John Augustus Sutter. By 1847 his colony had developed wonderfully. He had a thousand acres of land growing wheat; he owned 8,000 head of cattle, 2,000 horses and mules, 2,000 sheep and 1,000 hogs.

Commodore Stockton had confirmed him as alcalde, or justice of the peace, and General Kearney later made him Indian Agent. He had now come to the point where it became necessary to have a flour mill for the colony, and that a flour mill might be built, a saw-mill was necessary, to prepare timbers, planks and

boards. The machinery for these mills had been recently brought to the fort in 1844 by the ship *Lexington*.

Among the immigrants that came to the fort in 1844 was a man from New Jersey named James Wilson Marshall, a mill-wright by trade. He worked for Sutter for a time, but being taken with an attack of land-hunger, he undertook to work land of his own. Tiring of that, he came back to Sutter in 1847, when the necessity for the mills became so urgent. They formed a partnership in the saw-mill, and Marshall, with two white men and an Indian guide, left the fort on May 16, 1847, to search for a site and build the saw-mill. He found a place on the south fork of the American river, about forty-five miles from the fort, adjacent to timber, that he thought suitable. This place now bears the name of Coloma. Work on the mill and dam was at once begun, and in January of the following year the mill and dam had been constructed, and they were at work on the tail-race that was to lead the water, after it had done its work on the wheel, back to the river.

Marshall found conditions such that considerable time and labor could be saved by simply loosening up the earth with a pick and by turning on the water washing it out into the river.

On the afternoon of January 24, while directing this operation and walking along on the bank of the tail-race, his eye was attracted by some yellow specks that glittered in the sunlight. At first he took little notice of them, till seeing still more of them, the thought flashed through his mind — "Can these be gold?" He picked up a piece larger than the rest and examined it. He had never seen gold in its native state, but understood in a general



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way that it was heavier than lead and that it was a soft, not a brittle metal. He weighed it in his hands, bit it with his teeth, then laid it on a rock and pounded it with a smaller stone, and found that he could mash it a little. Being of a morose disposition, he became very thoughtful, and as he sat at supper with his mates he scarcely spoke a word; but at last he quietly remarked: "Boys, I think I have found a gold mine." One of the men spoke up and said, "I reckon not — no such luck for us."

He could not dismiss it from his mind, and was up betimes in the morning, again looking over the tail-race, and found more of the yellow particles. The thought that it might be gold thrilled him. He and his men picked up about four ounces of the yellow stuff, and Mrs. Wimmer, the camp cook, boiled them, which only made them brighter. This more and more convinced Marshall that they were gold. He begged his men to go on with the work and say nothing about it. On the morning of January 28 he mounted his horse and started for the fort, where he arrived early in the afternoon. He was covered with mud, for he had ridden hard, and it was raining so that he was wet to the skin, and he was very much excited. Walking into Sutter's office, he at once asked for a private interview. Whispering that the doors must be locked, this rather alarmed Sutter. Marshall then announced that he was sure he had found gold, and taking a little bag from his pocket he dumped his few ounces of nuggets on the table. Incredulous at first, Sutter soon became convinced that this was gold, especially after he had tested them with acid, and bringing from his drug store a small pair of scales, he put some silver coins in one of the saucers, and balancing them with gold

in the other, he lowered them into a basin of water. When the yellow metal dropped lower than the silver coins, he knew for sure that they were gold.

So excited was Marshall that though Sutter urged him to stay at the fort till the next morning, cold and wet as he was, he returned to the mill the same night, hardly taking time to eat a bit of supper. The next morning he was back on the road to meet Sutter, who had agreed to come then. They spent two days together looking the ground over and trying to decide what was the best thing to do.

Gold they found everywhere they looked for it, along the river. Marshall's chief anxiety was to secure for themselves all the rights to the gold in the ground to which they might be entitled. Sutter's viewpoint was somewhat different. He had developed a very valuable agricultural property, and at this time owned 12,000 head of cattle, 2,000 horses and mules, 10,000 to 15,000 sheep, and 1,000 hogs; he had grown during the past year 20,000 bushels of wheat, and had several thousand hides in process of tanning or waiting to be tanned. Then there were the two unfinished mills. He at once saw that if his men once broke away from him and went after the gold his mills would never be finished, and they were now more than ever absolutely necessary. So he decided to try and keep the whole matter secret, at least until the mills were finished, and he pledged his men to stay on the job and say nothing about the gold for the next six weeks. He thought that he could easily keep them isolated for that time. He also took the precaution of obtaining from the Indians living in the district the exclusive use of their lands for

all or any purpose, for himself and Marshall, for the next three years, the tract consisting of twelve miles square.

The excitement within the camp increased daily. One of the men, Bilger by name, had been assigned the duty of occasionally going along the river and its tributaries, to shoot deer and ducks, to give variety to the bill of fare. He always brought back with him specimens of gold that he easily found wherever he searched for it in the streams. Sutter himself became more and more uneasy as the weeks passed. His title to the land grant given him by the Mexican Government had not been confirmed by the United States authorities, that had so recently come into control of the new territory. There had not been time for such detail. At last he decided to send one of his trusted assistants, one Charles Bennett, to Monterey, to see the Acting Governor, Mason, and ask him to make a special grant, or at least give him and his partner exclusive milling and mining rights and privileges on the land they were developing. Mason had no power or authority to make such a grant. Bennett, though strictly enjoined to say nothing about the gold find, let the secret slip.

About the same time, supplies were needed at the saw-mill, and a teamster whom Sutter thought he could trust was sent with them. He, of course, heard from the workmen at the mill about the finding of gold, and being very incredulous, was given a few small nuggets to convince him. Returning to the fort, and still doubtful of the value of the yellow stuff he had gotten from the men at the saw-mill, the idea occurred to him that a good way to test the matter was to try to trade it for whiskey, so he offered his few pieces of yellow metal at the store that had been

recently opened at New Helvetia by Smith & Brannan. Smith, to whom he offered the gold, though distrustful of its being gold, made the trade. The whiskey loosened the teamster's tongue, and the secret was out. This was about a week before the six weeks of agreed secrecy had expired.

Unaware that they stood at the threshold of a great era, at the birthplace, one might say, of a mighty empire, Sutter and Marshall were reluctant to change the future of peaceful plodding pursuits that they had marked out for themselves, for they knew not what, nor did they dream that they would be the first to suffer disaster from this discovery.

The news that had been let loose by the trusted assistant and the drunken teamster spread like fire when touched to a pile of straw, to San Francisco, Monterey, Los Angeles and San Diego, almost to every settlement in California and up into Oregon, going almost like a flash. The men at the saw-mill and at the fort at once traded the particles of yellow metal they had found for picks, shovels, pans, blankets, boots, bacon, beef and flour, on the basis of eight dollars an ounce; this the traders were willing to risk as the value.

People poured in by the hundred from everywhere. The wheat in Sutter's fields was never harvested; his mills were never completed; no man now wanted to do his work. His sheep, cattle and hogs were stolen and devoured by hungry men who squatted on his lands, dug over and wasted them, till little by little his vast properties melted away. He spent his money in litigation that was fruitless, trying to reclaim the title to his lands, and

was saved from dire poverty by a pension from the State. He died in Washington, D. C., in 1880.

Marshall fared no better. The squatters took possession of the land, dividing it into mining claims; he wandered about the district, a broken, homeless man, till finally in 1865 he obtained a grant to a piece of land due him for services in the Mexican War, on which he lived, growing grapes, till death called him. A simple monument now marks the spot where Marshall first found the gold, and Sutter's Fort has been reproduced in one of Sacramento's parks to keep their memories green.

The news of the gold find spread the world over, to wherever news could be carried, and California, like a great lodestone, attracted the attention of all peoples, and became a Mecca for many. A great human tide flowed to it in three great streams; one of these being by sailing vessels around Cape Horn, that might take from six to nine months or longer, depending on the weather. Another stream went by the Isthmus of Panama; the very best time that could be made across was five days, which was made chiefly by mule-back, though often on foot, baggage being carried on mules, or on the shoulders of peons. The road was nothing more than a trail, a very poor one, at that. Arriving at Panama, the trip was continued up the coast by sailing vessel, or by the one steamer that had recently been put on by the Pacific Mail Steamship Company.

The third stream went overland across the plains and mountains by the Oregon or the Santa Fe trail, by wagons or pack trains. Either of these routes brought untold hardships, toil and

suffering to the gold-seeker; tales of these experiences of many are truly heart-rending, and we may relate some of these later.

The ships that left ports on the Atlantic coast late in December, 1848, for the trip around the Horn bound for San Francisco, began to arrive early in July, and by the end of that month fifty-four of them had anchored in the bay. Each succeeding month brought more and more, and besides there came from ports all over the world, ships that altogether, by the end of 1849, made up a total of 540, all of them laden to full capacity with a human cargo of all sorts and conditions, bankers, merchants, manufacturers, ship owners, mechanics, farmers, laborers, professional men, students, artists, and even women who had caught the vision of great riches, braved the dangers of ocean, mountain and desert to reach the land of gold.

Arriving at San Francisco, everybody, including the officers and crews of the ships, headed for the diggings. This went on during the next five years, until there were more deserted ships rotting at their anchor cables in San Francisco Bay than ever before or since in the history of the world. The city itself became almost deserted; at the time of the discovery it had a population of 800 that speedily shrunk to 150.

Food and miners' supplies of all kinds became very scarce; flour sold at \$400 a barrel, and sugar at \$4 a pound, and a very poor grade of coffee at the same price. In many cases flour brought \$2 a pound and whiskey \$20 a quart. Rowboats that ordinarily sold for \$50 or less, by the end of May, 1849, had jumped to \$500, for people could go to Sutter's Fort by rowboat. A shovel that formerly sold for a dollar now cost ten; picks,

crowbars, pans and knives all advanced in the same ratio. In like manner, clothing of all kinds, especially that of the coarser quality, advanced in price, and was hard to get.

The first news of the discovery reached Monterey (then the capital of the territory) on May 20, Colonel of Dragoons R. B. Mason being governor of the new territory, and the Rev. Walter Colton, alcalde of the City of Monterey. At first the news was considered very doubtful, till on June 5th, what seemed more reliable information was received, and the day following Colton despatched a messenger to the American River, to ascertain, as he wrote, "whether the reported gold was a tangible reality on the earth or a fanciful treasure at the base of some rainbow."

On the 12th of June a straggler wandered into the town with a nugget weighing an ounce, and a few days later a man who had worked for Colton as a body servant, after being absent for a short time, returned with \$2,000 worth of native gold. A rough-looking man who did not appear to have enough about him to buy a loaf of bread, came to Monterey with a sack on his shoulder, from which he shook \$15,000 worth of gold dust. Four citizens of Monterey who had employed some Indians on the Feather River, collected \$76,844 worth of gold in seven weeks and three days; a man who had worked sixty-four days on the Yuba River brought back \$5,356 in gold; another resident of Monterey, who worked fifty-seven days on the North Fork of the American River, brought back \$4,534; a party of fourteen who worked fifty-four days on the Mokelumne River, had \$3,467; a woman who had worked with pan and shovel in dry diggings forty-six days cleaned up \$2,125. All these incidents did not

seem to satisfy either the Governor or the Alcalde, and in order that absolute proof of the truth of the whole matter might be had, it was decided in September that the Alcalde should visit the mines in person, a party of responsible citizens accompanying him. Let us take the trip with them and note what they saw.

As they neared the mines they met returning gold hunters, of whom Colton wrote: "A more forlorn looking group never knocked at the gate of a pauper asylum. Most of them were on foot, with rags tied on their blistered feet." They asked for bread and meat; Colton's party gave them some, supposing that they were giving in charity, and were surprised when one of the party passed out a pound or two of nuggets in payment. Colton afterwards learned that the ragged travelers had with them over a hundred thousand dollars in virgin gold. On arrival at the mines the eager Alcalde borrowed a pick, and in five minutes found enough gold to make a seal ring. He found seventy people at work in a small ravine, each of them getting an ounce a day. A sailor whom he had known when he was chaplain on the *Savannah* had found a nugget that weighed three ounces. He found another man picking at a spot on the canyon side who presently uncovered a pocket from which he took nearly two pounds of nuggets, all shaped like water-melon seeds, and near to this spot, on the following day, he uncovered a pound and a half.

A Welshman whom the Alcalde had a short time before fined for being drunk, and disturbing the peace, met him with a hearty greeting, assuring him that he held no grudge against him, and turning to resume his work, uncovered a nugget that weighed an ounce or more; picking it up, he handed it to Mr. Colton, saying:

"Senor Alcalde, accept that, and when you reach home, have a bracelet made of it for your good lady." A German picked up a piece weighing three ounces, from the ground in front of Colton's tent, and later in the same day Colton himself took half an ounce from a crevice in a rock. A little girl playing in a ravine near her mother's tent, picked up a curious-looking stone that proved to be nearly pure gold; it weighed over six pounds. A much larger lump, twenty-three pounds in weight, was later found nearby.

Two men invited Colton to come and see their claim. He found them working in a hole up to their waists in water; they were getting from fifteen to twenty dollars out of every pan they washed, and the day that he was with them they took \$1,000 for their day's work. He found at a place about three miles from his camp a woman working alone. He had known her in San Jose; she was washing gravel in a wooden bowl, and had averaged an ounce a day for three weeks.

Just before leaving the mines at the end of his stay of six weeks, he found seated on a stone under a tree, in rather a dejected condition, an old man, who bewailed the fact that he had worked for many days and gotten little or nothing, and that he would move to another place. Colton said to him, "Why not turn over the stone you are sitting on?" He replied, "It ain't worth while, but I will do it if you say so." He turned it over, and clearing away a little dirt, found a lot of nuggets that weighed nearly a half a pound.

On the way home, his party overtook another old man with his grandson; they had been in the mines and collected twenty

pounds of nuggets, of which they had been robbed, and were poorer than when they began.

Governor Mason also visited the mines, and made a report of his trip to the Adjutant-General of the United States. The report was dated August 17, 1848. With his report he sent two hundred and twenty-eight ounces of nuggets as specimens of the product of the mines. He had visited mines on all the rivers in the gold-bearing territory; his report relates many interesting incidents, among them the following: He was shown a trench about a hundred yards long, four feet wide and three feet deep, from which there had been taken in one week \$17,000; a small ravine near to it had yielded \$12,000; men were picking gold out of the crevices of the rocks with butcher knives, in pieces weighing from one to six ounces. At Weber's store in Helvetia, a man had given an ounce and a half of gold worth \$24 for a box of seidlitz powders; another man had paid one dollar for a drop of laudanum.

He estimated the whole output of the mines at that time from thirty to fifty thousand dollars a day, and stated that he thought that the mines in the Sacramento and San Joaquin Valleys would easily repay the cost of the late war with Mexico, together with all that the Government had paid for lands ceded. All this gold was being taken from land which now belonged to the Government, and he thought something should be paid for the privilege of mining, but he saw no way to collect it, having but few soldiers, not enough to cover the large territory that was being worked over. He had considerable trouble holding enlisted men to the performance of their duties, so concluded not to make any rules that he could not enforce. The gold-bearing region known

at that time was about two hundred miles long, averaging about thirty miles wide.

This report he despatched by special messenger by way of Panama; it reached Washington in time for President Polk to mention the discovery in his message to Congress in December, thus transmitting it to the people. It attracted wide attention, creating great interest everywhere, so that every newspaper in the country, nay, in the world, was daily scanned for news from the California gold diggings.

Enough has been said, and the many instances related will give readers a fair idea of the magnitude and importance of Marshall's discovery. It will be of interest to add further that from the time of the discovery in 1848 to January 1st, 1903, California had produced \$1,379,275,408 in gold. There were two periods of intense excitement, the first ending in 1854. From 1850 to 1853, the greatest yield from washings was probably not less than \$65,000,000 a year. The average production per year for the years 1851 to 1854, inclusive, was \$75,570,087, reaching \$81,294,270 in 1852; this was the banner year, and from 1850 to 1862 the average production was \$55,882,861, never falling below \$50,000,000.

The ardent hope that ever lured the plodding miner and the prospector as well, was that they would come upon some rich deposits of dust, or a big nugget, that would make them rich at once. Let me quote from Eldridge's history: "Some nuggets of surprising size were found in the early years, the largest recorded being one of one hundred and forty-one pounds four ounces of almost pure gold, found in 1854. One of perhaps equal

value was found by some Chinamen, who cut it to pieces with cold chisels, and sold it bit by bit with their gold dust, fearing that it would be taken away from them if shown to anyone in the shape in which they found it. A single lump weighing one hundred and six pounds was found in Baltimore ravine, near Auburn, and another of one hundred and three pounds, and still another of ninety-six pounds near Downieville. A seventy-two pound chunk was found near Columbia, one worth \$10,000 at Ophir, in Sutter County; one of fifty pounds on the Yuba; one of forty-four pounds near Dogtown, Butte County; one of fifty-one pounds near French ravine, in Sierra County, and one of eighty pounds from the American River.

"Pieces weighing from ten to forty pounds have been found in many places, and sometimes in the most casual manner. A farmer strolling through his pasture on or near the lower Mokelumne River, one Sunday morning, kicked at what appeared to be a stone lying in his path, but which proved to be so heavy that he examined it more carefully. It proved to be a lump of almost pure gold worth several thousand dollars. Many lucky miners made their fortunes within a few months after arriving at the mines in 1849 and 1850. Many were more easily satisfied, and returned east after they had found enough to buy a farm near the old homestead, or to pay off a mortgage, or start in some business for which they had long striven. Many lost their health and even their lives. The number of those who died in their tents or cabins, or under the open sky, during the fierce struggle of the first years after the discovery, will never be known."

II

Those who made the trip across the plains usually began the long journey at Independence or Westport, Missouri, for at that time the Missouri River was considered the western boundary of all civilization, and as these gold-hunters launched out on the almost trackless prairies that lay west of that mighty stream, many considered themselves as entering a country of peculiar freedom, and it was often said that "law and morality never crossed the Missouri River."

Many parties came to this starting place by steamer via the Mississippi and Missouri rivers. There trains or companies, sometimes consisting of several hundred people organized for the trip; this they did for mutual protection from the Indians. The usual outfit was a stout wagon with a cover of white canvas or sheeting that was oiled or painted, stretched over hickory or oak, the same prairie schooner that had brought thousands to the Middle West.

I have read many books that tell the stories of many parties who crossed, all of them filled with thrilling incidents of hardships and heroisms that are almost unbelievable. The book entitled *Death Valley in '49*, by William Lewis Manley, is perhaps the most striking, being a story of personal experiences.

At the age of twenty, W. L. Manley left his father's home on the frontiers of civilization, near Jackson, Michigan, that was then, in 1840, still a territory. He was starting in life for himself with seven dollars in his pocket. He and a companion together bought enough pine boards with which to build a boat, on

which they paddled down Grand River to the place where the city of Grand Rapids now is. There they found a schooner, loaded with lumber, about to sail across the lake to Wisconsin, and for a dollar each they were permitted to cross on her. They were put ashore at Southport. At that time Wisconsin was practically a wild waste, but they tramped clear across it to Mineral Point, arriving there with blistered feet, Manley having thirty-five cents in his pocket. They found it hard to obtain employment, but finally did so, receiving the sum of thirteen dollars a month; a little later he went to work digging lead ore in the summer, and in the winter hunted fur-bearing animals.

In the spring of 1849 he caught the gold fever, and arranged to go to California with a man named Bennett, who with his wife and two children was about to go there. Through a misunderstanding as to the time of starting, the Bennetts started two weeks before Manley knew that they had gone. They had taken his outfit with them, thinking that he would overtake them. This he tried to do, but did not find them for many months after, when he accidentally met them at Salt Lake City. At Council Bluffs, he found himself with nothing but the clothes he wore, an extra shirt, a light gun, a small light tent, a frying-pan, a tin cup, his mules, but no money. He had come to the conclusion to return to Michigan, when he met a man named Charles Dallas, from Iowa, who was preparing to join a train of wagons bound for California. Dallas offered to feed Manley if he would drive one of his teams clear through; this he very reluctantly agreed to do.

The train was made up of a number of ox teams; the one Manley drove consisted of two oxen and two cows. After much

hardship and many hairbreadth escapes, they reached a point near the Mormon settlement at Salt Lake City, where they found a band of emigrants, camped among them being Manley's friends, the Bennetts, from whom he received his complete outfit just as he had left it with them months before in Wisconsin. He at once decided to join the Bennetts, and as Mr. Dallas had decided to stay at Salt Lake City until spring, he had no compunction in doing so. This other train consisted of one hundred and seven wagons, with about 500 horses and cattle. The company had a semblance of military organization, being made up of seven divisions, each having its own captain, whom they elected; one Captain Hunt was engaged to act as guide and commander (he called himself Dictator), acting under rules that had been framed by the whole body. These rules, it was understood, could be amended by a majority of the whole; each member was to pay Captain Hunt ten dollars for acting as their pilot. Hunt was a Mormon, and pretended to know the best routes to California. It was planned that they should move with military precision, division number one taking the lead the first day, division number two the second day, and so on in regular routine.

The route chosen was a new one for a wagon train, though there was a trail over which the Mormons traveled to their settlement or colony at San Bernardino, located about sixty miles east of Los Angeles.

A few days after starting, they met with another party of emigrants, spoken of in the histories as the Smith party, its leader's name being Smith. Captain Smith had a map procured at Salt Lake City, from an engineer named Williams, that showed

a route still different from the one Hunt was taking; this map pretended to show every place on the route where grass and water could be found. Hunt had no map, and many of his party who had lost confidence in him, were inclined to go with the Smith party. There was much discussion on the subject, and finally, when they reached the place where the two trails diverged, many of the Hunt party joined Smith's, among them the Bennetts, and, of course, Manley. About three days after the breaking up of the Hunt party, the Smith train discovered that they had made a mistake. They came to a place beyond which it seemed the wagons could not go. Many in the train then turned back to go by the Hunt trail, so that the Smith party was reduced to twenty-seven wagons, among them the Bennetts.

Parties that had been sent out to find a pass shortly returned, reporting that they had found one, so on the twenty-seven wagons went. Soon they found a broad, well-defined trail that became known as the Jay-Hawker's trail; at this point it ran over rolling hills covered with juniper trees, and through grassy valleys, with plenty of water, and all went very well. It was now November.

They plodded on, ever westward, but day after day getting farther away from game that was now the only source of food for themselves, and from water and grass so necessary for their animals as well as themselves. The party to which the Bennetts clung had been reduced to seven wagons, for dissensions due to difference of opinion had sprung up, so that a large number had broken away. Each day their supply of food diminished, so that at last they had to kill one of their steers to keep them supplied with food.



Westward Ho!

Manley spent all his time on scouting expeditions, searching for water and game, climbing to high points on the hills to spy out the land and decide what route should be taken, using a field glass owned by one of the party. Out on one of these expeditions, far ahead of the party, he came upon a dead ox that had fallen by the way. With his knife he cut into one of its hams and found that, on account of the dryness and purity of the atmosphere, the meat was fresh and sweet, though probably dead for many days. He was glad to eat it raw as he walked along.

All around, as far as the eye could reach, was dry desolation, not a spear of grass, not a drop nor sign of water anywhere. Night came on; he crept under a projecting rock to try to sleep, being afraid to make a fire, for he had seen signs of Indians, whom he feared. When he awoke it was Christmas day. They were now in what a little later came to be known as Death Valley, because so many of those who entered it never came out.

One day their eyes were gladdened by the sight of water. It was far ahead of them, but it gleamed in the sunlight and cheered them on. But alas! it proved to be salt water. Soon they reached a condition where it was decided that all the provisions of civilized life should be pooled, and served only to the women and children and that, as occasion required, an ox should be killed, the meat dried and served to the men; every scrap of the ox, the hide and horns excepted, was used for food, every drop of blood was as precious to them as the grains of gold they were in search of. Four of the teamsters now decided to take their share of the provisions, together with their blankets and guns, leave the party and push on to try to save themselves.

The party crawled along, the oxen hardly able to stand, having had no food or water for many days, and as far as Manley could see, there was no prospect of any being found. A solemn council was held, at which it was agreed that they could only live till the last of their cattle had been eaten up. It was then agreed that they should turn back to the place where they had last found a spring of water and grass, and that there the party should camp, while two of the youngest men, taking some of the food, should push on till they found a settlement where they could get help and food, and return as fast as possible; they hoped that in ten days they might be able to return with the needed relief.

The next morning the oxen were hitched up and started back to the spring. Shortly after they had started, one of them became so feeble that he lay down and never rose again, and when they were within two miles of the spring, another one could travel no further, and also lay down. Arriving at the spring, they carried water back to him, so that he recovered and came on to the spring.

Manley and a man named Rodgers, from Tennessee, were selected, and agreed to undertake the hazardous journey. Preparations were at once made for their departure; the weakest of the oxen was slaughtered, and the meat dried; the women made rawhide moccasins and knapsacks, and packed as much of the dried meat as could be comfortably carried. Manley and Rodgers started off with the expressed hopes and blessings of each member of the party.

Manley writes: "I wore no coat or vest, but took half a light blanket, while Rodgers wore a thin summer coat, and took no

blanket; we each had a small tin cup and a small camp kettle that held a quart. Bennett had me take his seven-shooter rifle, and Rodgers had a good double-barreled shotgun; we each had a sheath-knife, and our hats were small-brimmed affairs, fitting close to the head, and not very conspicuous to the enemy, as we might rise up from behind a hill, or a hiding-place, into view. We tried on our packs and fitted the straps a little, so that they would carry easy, and started off."

The party they left in camp consisted of thirteen adults and six children; there was very little civilized food, the oxen that might be killed when necessary being their chief reliance.

Manley and Rodgers took a course due west as nearly as the mountains would permit. Days passed, but they found no water. A big snow-capped mountain in the distance lured them on, and not till they came within its influence did they find relief. In order not to miss a possible chance of finding water, they separated, agreeing on a general course each would take, and that if either found water he should fire his gun as a signal. In a little while Rodgers fired his gun, and going to him, Manley saw that he had found a little ice as thick as window glass; eagerly they put some of it into their mouths and gathered all they could. It just filled their quart kettle; this they melted, and thus saved their lives. They had become so thirsty and their mouths and tongues became so dry that they could not chew their dried beef; the saliva would not flow. On they went again; in a few days they found a well developed trail leading toward the west. This they followed and came up with a party written of in the histories as

the Jay-Hawkers. They were camped at some water holes where they had killed an ox and were drying the meat.

From them they received some fresh meat, and were also much refreshed by the water; they filled their canteens and pressed on, every moment being precious. When they parted, tears flowed freely from all eyes. Many of the larger company, being men past middle life, had about concluded that their chance of surviving the hardships through which they were passing were rather slim. They gave Manley and Rodgers the names and addresses of the friends they had left in the old home, asking them to tell their friends where and how they had found them, provided that they themselves were fortunate enough to reach a post office.

Soon after leaving the camp of the Jay-Hawkers, Manley and Rodgers realized that they had crossed the divide and that every step they took was down the Pacific slope; soon they began to see signs of life; a crow came in sight and perched within gunshot, and very promptly he was shot and bagged in Rodgers' knapsack. A little later a hawk hove in sight, and it was very promptly taken care of in the same way; then a little further along they spied a quail; it also they shot.

Trees began to appear, and stumbling into a narrow ravine and following it for many miles, it led them to a much larger one, and O joy! there was a babbling brook of clear, sparkling water that literally sang them welcome as it wimpled over the stones in its course. They drank liberally of its life-giving stream, then dressed and cooked their three birds, and began to feel that life still held something for them. Soon a broad, grassy meadow

opened before them. I will quote Manley's words describing this incident.

"Before us was a spur from the hills that reached nearly across the valley and shut out further sight in that direction, and when we came to it we climbed up over it to shorten the distance. When the summit was reached, a most pleasing sight filled our sick hearts with a most indescribable joy.

"I shall never have the ability to adequately describe the beauty of the scene as it appeared to us, and so long as I live that landscape will be impressed on my mind. There before us was a beautiful meadow of a thousand acres, green as a thick carpet of grass could make it, and shaded with oaks, wide-branching and symmetrical, equal to those of an old English park. While all over the low mountains that bordered it on the south, and over the broad acres of luxuriant grass was a herd of cattle numbering many hundreds, if not thousands. All seemed happiness and contentment, and such a scene of abundance and rich plenty and comfort, bursting thus upon our eyes, which for months had seen only the desolation and sadness of the desert, was like getting a glimpse of Paradise, and tears of joy ran down our faces. The day was bright with sunshine as well as with hope, and it was the first day of January, 1850."

Not a human being was in sight, and they were very hungry; down in a deep gully cut out by the rains, a yearling steer was feeding; Manley, gun in hand, crawled near to him and fired two shots, and as quickly as possible they were enjoying some of his meat that they roasted at once. They ate till they were satisfied, the first time in many long, dreary weeks. They then dried the

balance of the meat, one of them sleeping while the other worked, relieving each other every few hours. The miserable dried meat that had been so long in their knapsacks they threw away, and refilled them with this good, fresh meat store.

They also made for themselves moccasins from the hide of the steer, and then continued their journey, though not very sure that they might not be pounced on at any moment for shooting the yearling steer. Soon they came to a strange-looking house of the adobe Mexican type, that proved to be the home of a farmer. There they found the woman of the house, but she could not speak or understand a word of English.

They had come out from the Sierra Madre Mountains into the San Fernando Valley at a point not far from the mission of that name. They went there and were entertained for the night, sleeping on the floor, but indoors. Here they met an American, with whom they talked over their troubles, and concluded, under his advice, that they would save time by returning to the settler's house at which they had stopped on the previous day, and get provisions they wanted. They might go on to Los Angeles, some thirty miles away, and fare no better, that place being very badly demoralized on account of the rush to the gold mines.

Their new found friend agreed to go with them and act as interpreter. There they procured three horses, a little mule, a sack of beans, a sack of unbolted flour, and one of wheat, which they would have to grind themselves; also some dried meat. This food their friends showed them how to pack on the backs of the horses, and as quickly as possible they started on the return journey, to try and save the other members of the party.

About the fourth day out the horses got so worn out and feeble for the want of food and water that they could hardly crawl along; their heads flung low, almost touching the ground. They then concluded to bury the sack of wheat, hoping to find it on their return; this they did, and loaded the other sacks on the mule, which seemed to be in better condition.

The next day the ground became so rough and the grade so steep that the horses were unable to get over it, and had to be abandoned. Then, too, they found the bodies of two men who had traveled with them in the Jay-Hawkers' party. They had died by the side of the trail and had to be left there. This, of course, was all very disconcerting to our brave fellows, and only the thought that many other lives depended on their efforts urged them on.

At last, on the twenty-sixth day after leaving their friends camped at the spring, they were again in its vicinity. Their first sight or sign of their fellow travelers was to find the dead body of one of them — Captain Culverwell — lying on the trail. He lay on his back, his arms extended, his little canteen, made of two powder flasks, lying by his side. Manley writes: "This looked, indeed, as if some of our saddest forebodings were coming true. How many more bodies should we find? — or should we find the camp deserted, and never find a trace of the former occupants?"

"We marched toward camp like two Indians, silent and alert, looking out for dead bodies and live Indians, for really we expected to find the camp devastated by those rascals, rather than to find that it still contained our friends. About noon we came

in sight of the wagons, still a long way off, but in the clear air we could make them out.

“No signs of life were anywhere about, and the thought of our hard struggles between life and death, to go out and return with the fruitless results that now seemed apparent, was almost more than human heart could bear. When should we know their fate? Where should we find their remains, and how learn their sad history, if we ourselves should live to get back again to settlements and life? If ever two men were troubled, Rodgers and I surely passed through the furnace. One hundred yards to the wagons, and still no sign of life; we fear that perhaps there are Indians in ambush, and with nervous, irregular breathing we counsel what to do. Finally Rodgers suggested that he had two charges in his shotgun, and I seven in the Colts rifle, and that I fire one of mine and await results before we ventured any nearer. I fired, and in a moment a man came from under one of the wagons and stood up. Then he threw up his arms and shouted, ‘The boys have come!’ Then other bare heads appeared, and Mr. Bennett and wife and Mr. Arcane came running toward us. They caught us in their arms and embraced us with all their strength. Mrs. Bennett fell on her knees and clung to me like a maniac in the great emotion that came to her, and not a word was spoken.”

They estimated that they had traveled five hundred miles since they had left the camp, and found on their return that the party had been reduced till only Mr. and Mrs. Bennett and their four children and Mr. and Mrs. Arcane and their boy remained; the others had pressed forward from time to time to try to escape from the desert. Immediately they began to prepare for the

long journey. There were five oxen still left. It was at once decided that everything should be left behind, only things absolutely necessary for the sustaining of life to be taken along — a kettle, a tin cup for each, a few knives, forks and spoons, and all the blankets and the clothes they wore. It was planned that the two women should each ride on an ox; though they had never known or heard of such a thing being done, they thought it practicable. The cloth in the wagon covers and in bed ticks was made into harness, the blankets being used for saddles, and one of the oxen, old Crump, the gentlest of them, was rigged out with saddle bags made from two of the men's hickory shirts, in which the two youngest children were to be carried; the older ones were to ride like the women. Manley and Rodgers made new moccasins for themselves, and in a very few days they were ready to start.

It was very soon found that riding an ox was impracticable, and the women and older children had to walk. In a few days they were out of the valley, to which they had given the gruesome name, "Death Valley." Their food consisted of soup made from the beans and flour boiled with some of the dried beef, some of which they also ate. When five days out, their stock of beans became entirely exhausted, but at the place where they were to camp for the night was the sack of whole wheat that Manley and Rodgers had buried. This they had hidden so well that they had considerable trouble locating it. When found, although it had been buried in the dry desert sand, it had absorbed enough moisture from it that it had swollen so that the

bag was nearly at the bursting point. But it was sweet and quite fit for food. At this camp they had to kill an ox.

They had had no water all day. Manley and Rodgers had gone on ahead and started a fire, and made what preparations they could to ease the hardship of the situation, selecting the best spots on which to sleep, spreading the blankets, and having the soup ready to serve, so that when the weary, bedraggled women and children arrived, they could at once lie down and be served with their share.

The women declared that but for the children they would cheerfully lie down and die, rather than endure another such day. The distance from the last camp to this spring was longer and the trail much rougher than on any of the previous days. Near to this camp, too, they had to pass the place where the bodies of Mr. Fish and Mr. Isham lay, and which Manley and Rodgers had covered with sand.

At this camp they had to make moccasins for themselves and also for the oxen, whose feet had become so lacerated and tender from tramping over knife-edged stones, it was feared that they might give out altogether. These moccasins they made from the hide of the ox they had just slaughtered.

It was four days' travel to the next water hole, and all the water they could have during that time was what they could carry in their canteens. This they did not dare use during the day, but must save for their soup; none but the children could have any water, and they only at long intervals, and after they had cried hard for it.

The third night they had to make their soup with salt water

which they found in a water hole; the next day they had no water at all for themselves or the oxen, only a little for the children, till they arrived at water holes at the base of a snow mountain. The oxen had to subsist on grease-wood, a shrub resembling a currant bush.

They were nine days from camp, their beans, flour and wheat all used up. They must now subsist on the beef obtained by killing their oxen. An ox yielded very little meat, and it was of the very poorest quality, giving very little nutrition; always they had to kill the poorest-conditioned one, so as to make sure the others could travel on, for they were now reduced to skin and bone.

The moccasins of the entire party were again completely worn out, so that, as one of the women expressed it, their feet ached like the tooth-ache; not only were their feet blistered and sore, but their dresses were worn off nearly to their knees by being dragged through the chaparral of the desert. But they could not stop long enough to kill an ox or make moccasins, but must plod on that the lives of the whole party might be saved. Their camp would be at a spring, and they must reach it that day, but they were caught by darkness four hours short of it, and did not reach it till four hours after daylight the next day; and to make matters worse, a rain-storm, the second they had encountered since leaving Wisconsin, came up that turned to snow, and at sunrise there were two inches of snow on the ground. Their condition was truly miserable. They rested long enough at the next spring to kill an ox and make moccasins. The

amount of meat procured from the ox when dried was easily carried in the mule's pack, it was so very small.

The next morning, after their meal of soup made from the meat of the ox, they felt somewhat refreshed, and in better spirits. It was a two days' journey to the next water hole. They were now in what later came to be called the Mojave Desert, a waterless, barren plain, on which nothing grew with which they could make a fire, nothing to which they could even tie their animals, and when they camped that night, they simply tied them together. They could not make a fire; they had to content themselves with a little dried meat, and a little sip of water, for they were still another day from water, that they reached late the following afternoon, and also found a little grass for the cattle.

The next day, a few hours after starting, they lost the trail; the ground was of such a nature it could not retain marks of a trail. It was plenteously covered with the bones of animals, however, showing that many had passed that way, all of which so depressed the women that they had to go into camp until the next morning. That night they came to the water hole they had planned to reach the night before; all that the cattle could have for food was a few sage bushes at which they nibbled. The next day they were in a hilly country, and the day following they came to the little babbling brook that had so delighted Manley and Rodgers the first time they saw it.

Here Manley writes in his journal, "New life seemed to come to the dear women. 'O, what a beautiful stream!' they cried, and they dip in a tin cup and drink, and drink again, then watch

the rollicking brook as if it was the most entertaining thing in the whole wide earth."

It was now the seventh day of March, 1850, twenty-two days since they left their wagons, and four months since they entered Death Valley, and about a year since they left Wisconsin. It had been for them a year of wandering, struggle and terrible hardship. They took a long rest, the cattle eating their fill, and then slowly traveled to the home of the settler where Manley and Rodgers had obtained their supplies. The woman recognized them, and when the men came home they were handsomely treated.

None of our travelers had a cent of money. Mr. Arcane sold his two steers, all the property he had in the world, to the Mexicans, and with the money obtained started for San Pedro, the post of Los Angeles; there he hoped to obtain a passage on a sailing vessel to San Francisco. The Bennetts, Manley and Rodgers leisurely went on to Los Angeles, some thirty miles away, and from there found their way to the mines.

III

EARLY DAYS IN NEVADA *

J. ROSS BROWNE

1860

I was desirous of seeing as much of the mining region as possible, and with this view took the stage for Virginia City. The most remarkable peculiarity on the road was the driver, whose likeness I struck in a happy moment of inspiration. At Silver City, eight miles from Carson, I dismounted, and proceeded the rest of the way on foot. The road here becomes rough and hilly, and but little is to be seen of the city except a few tents and board shanties. Half a mile beyond is a remarkable gap cut by Nature through the mountain, as if for the express purpose of giving the road an opportunity to visit Virginia City.

As I passed through the Devil's Gate it struck no indecorous sense. I was simply about to ask where he lived, when, looking up the road, I saw amidst the smoke and din of shivered rocks, where grimy imps were at work blasting for ore, a string of adventurers laden with picks, shovels, and crowbars; kegs of powder, frying-pans, pitch-forks, and other instruments of torture — all wearily toiling in the same direction; decrepit old men, with avarice imprinted upon their furrowed brows; Jews and Gentiles, foot-weary and haggard; the young and the old, the strong and

* From Harper's Magazine, 1861.

the weak, all alike burning with an unhallowed lust for lucre; and then I shuddered as the truth flashed upon me that they were going straight to — Virginia City.

Every foot of the cañon was claimed, and gangs of miners were at work all along the road, digging and delving into the earth like so many infatuated gophers. Many of these unfortunate creatures lived in holes dug into the side of the hill, and here and there a blanket thrown over a few stakes served as a domicile to shield them from the weather.

At Gold Hill, two miles beyond the Gate, the excitement was quite pitiable to behold. Those who were not at work, burrowing holes into the mountain, were gathered in gangs around the whisky saloons, pouring liquid fire down their throats and swearing all the time in a manner so utterly reckless as to satisfy me they had long since bid farewell to hope.

This district is said to be exceedingly rich in gold, and I fancy it may well be so, for it is certainly rich in nothing else. A more barren-looking and forbidding spot could scarcely be found elsewhere on the face of the earth. The whole aspect of the country indicates that it must have been burned up in hot fires many years ago and reduced to a mass of cinders; or scraped up from all the desolate spots in the known world, and thrown over the Sierra Nevada Mountains in a confused mass to be out of the way. I do not wish to be understood as speaking disrespectfully of any of the works of creation; but it is inconceivable that this region should ever have been designed as an abode for man.

A short distance beyond Gold Hill we came in sight of the

great mining capital of Washoe, the far famed Virginia City. In the course of a varied existence it had been my fortune to visit the city of Jerusalem, the city of Constantinople, the city of the Sea, the City of the Dead, the Seven Cities, and others of historical celebrity in the Old World; and many famous cities in the New, including Port Townsend, Crescent City, Benicia, and the New York of the Pacific*; but I had never yet beheld such a city as that which now burst upon my distended organs of vision.

On the slope of mountains speckled with snow, sage-bushes, and mounds of upturned earth, without any apparent beginning or end, congruity or regard for the eternal fitness of things, lay outspread the wondrous city of Virginia.

Frame shanties, pitched together as if by accident; tents of canvas, of blankets, of brush, of potato-sacks and old shirts, with empty whisky barrels for chimneys; smoky hovels of mud and stone; coyote holes in the mountain-side forcibly seized and held by men; pits and shafts with smoke issuing from every crevice; piles of goods and rubbish on craggy points, in the hollows, on the rocks, in the mud, in the snow, everywhere, scattered broadcast in pell-mell confusion, as if the clouds had suddenly burst overhead and rained down the dregs of all the flimsy, rickety, filthy little hovels and rubbish of merchandise that had ever undergone the process of evaporation from the earth since the days of Noah. The intervals of space, which may or may not have been streets, were dotted over with human beings of such sort, variety, and numbers that the famous ant-hills of Africa

* San Francisco.



Early Nevada Days

were as nothing in the comparison. To say that they were rough, muddy, unkempt and unwashed, would be but faintly expressive of their actual appearance; they were all this by reason of exposure to the weather; but they seemed to have caught the very diabolical tint and grime of the whole place. Here and there, to be sure, a San Francisco dandy of the "boiled shirt" and "stove-pipe" pattern loomed up in proud consciousness of the triumphs of art under adverse circumstances; but they were merely peacocks in the barn-yard.

A fraction of the crowd, as we entered the precincts of the town, were engaged in a lawsuit relative to a question of title. The arguments used on both sides were empty whisky-bottles, after the fashion of the *Basilinum*, or club law, which, according to Addison, prevailed in the colleges of learned men in former times. Several of the disputants had already been knocked down and convinced, and various others were freely shedding their blood in the cause of justice. Even the bull-terriers took an active part — or, at least, a very prominent part. The difficulty was about the ownership of a lot, which had been staked out by one party and "jumped" by another. Some two or three hundred disinterested observers stood by, enjoying the spectacle, several of them with their hands on their revolvers, to be ready in case of any serious issue; but these dangerous weapons are only used on great occasions — a refusal to drink, or some illegitimate trick at monte.

Upon fairly reaching what might be considered the centre of the town, it was interesting to observe the manners and customs of the place. Groups of keen speculators were huddled around

the corners, in earnest consultation about the rise and fall of stocks; rough customers, with red and blue flannel shirts, were straggling in from the Flowery Diggings, the Desert, and other rich points, with specimens of croppings in their hands, or offering bargains in the "Rogers," the "Lady Bryant," the "Mammoth," the "Woolly Horse," and Heaven knows how many other valuable *leads*, at prices varying from ten to seventy-five dollars a foot. Small knots of the knowing ones were in confidential interchange of thought on the subject of every other man's business; here and there a loose man was caught by the button, and led aside behind a shanty to be "stuffed"; everybody had some grand secret, which nobody else could find out; and the game of "dodge" and "pump" was universally played. Jew clothing-men were setting out their goods and chattels in front of wretched-looking tenements; monte-dealers, gamblers, thieves, cut-throats, and murderers were mingling miscellaneously in the dense crowds gathered around the bars of the drinking saloons. Now and then a half-starved Pah-Ute or Washoe Indian came tottering along under a heavy press of fagots and whisky. On the main street, where the mass of the population were gathered, a jaunty fellow who had "made a good thing of it" dashed through the crowds on horseback, accoutred in genuine Mexican style, swinging his *reata* over his head, and yelling like a devil let loose. All this time the wind blew in terrific gusts from the four quarters of the compass, tearing away signs, capsizing tents, scattering the grit from the gravel-banks with blinding force in everybody's eyes, and sweeping furiously around every crook and corner in search of some sinner to smite. Never

was such a wind as this — so scathing, so searching, so given to penetrate the very core of suffering humanity; disdaining overcoats, and utterly scornful of shawls and blankets. It actually seemed to double up, twist, pull, push, and screw the unfortunate biped till his muscles cracked and his bones rattled — following him wherever he sought refuge, pursuing him down the back of the neck, up the coat-sleeves, through the legs of his pantaloons, into his boots — in short, it was the most villianous and persecuting wind that ever blew, and I boldly protest that it did nobody good.

Yet, in the midst of the general wreck and crash of matter, the business of trading in claims, “bucking,” and “bearing” went on as if the zephyrs of Virginia were as soft and balmy as those of San Francisco.

This was surely — No matter; nothing on earth could aspire to competition with such a place. It was essentially infernal in every aspect, whether viewed from the Comstock Ledge or the summit of Gold Hill. Nobody seemed to own the lots except by right of possession; yet there was trading in lots to an unlimited extent. Nobody had any money; yet everybody was a millionaire in silver claims. Nobody had any credit, yet everybody bought thousands of feet of glittering ore. Sales were made in the “Mammoth,” the “Lady Bryant,” the “Sacramento,” the “Winnebunk,” and the innumerable other “outside claims,” at the most astounding figures — but not a dime passed hands. All was silver underground, and deeds and mortgages on top; silver, silver everywhere, but scarce a dollar in coin. The small

change had somehow gotten out of the hands of the public into the gambling saloons.

Every speck of ground covered by canvas, boards, baked mud, brush, or other architectural material, was jammed to suffocation; there were sleeping houses, twenty feet by thirty, in which from one hundred and fifty to two hundred solid sleepers sought slumber at night, at a dollar a head; tents, eight by ten, offering accommodations to the multitude; any thing or any place, even a stall in a stable, would have been a luxury.

The chief hotel, called, if I remember, the "Indication," or the "Hotel de Haystack," or some such euphonious name, professed to accommodate three hundred live men, and it doubtless did so, for the floors were covered from the attic to the solid earth — three hundred human beings in a tinder-box not bigger than a first-class hencoop! But they were sorry-looking sleepers as they came forth each morning, swearing at the evil genius who had directed them to this miserable spot — every man a dollar and a pound of flesh poorer. I saw some, who perhaps were short of means, take surreptitious naps against the posts and walls in the bar-room, while they ostensibly professed to be mere spectators.

In truth, wherever I turned there was much to confirm the forebodings with which I had entered the Devil's Gate. The deep pits on the hill-sides; the blasted and barren appearance of the whole country; the unsightly hodge-podge of a town; the horrible confusion of tongues; the roaring, raving drunkards at the bar-rooms, swilling fiery liquids from morning till night; the flaring and flaunting gambling-saloons, filled with desperadoes of

the vilest sort; the ceaseless torrent of imprecations that shocked the ear on every side; the mad speculations and feverish thirst for gain — all combined to give me a forcible impression of the unhallowed character of the place.

What dreadful savage is that? I asked, as a ferocious-looking monster in human shape stalked through the crowd. Is it — can it be — No; that's only a murderer. He shot three men a few weeks ago, and will probably shoot another before night. And this aged and decrepit man, his thin locks floating around his haggard and unshaved face, and matted with filth? That's a speculator from San Francisco. See how wildly he grasps at every "indication," as if he had a lease of life for a thousand years! And this bulldog fellow, with a mutilated face, button-holing every by-passer? That fellow? Oh, he's only a "bummer" in search of a cocktail. And this — and this — all these crazy-looking wretches, running hither and thither with hammers and stones in their hands, calling one another aside, hurrying to the assay-offices, pulling out papers, exchanging mysterious signals — who and what are all these? Oh, these are Washoe millionaires. They are deep in "outside claims." The little fragments of rock they carry in their hands are "croppings" and "indications" from the "Wake-up-Jake," "Root-Hog-or-Die," "Wild-Cat," "Grizzly Hill," "Dry-up," "Same Horse," "Let-her-Rip," "You Bet," "Gouge-Eye," and other famous ledges and companies, in which they own some thousands of feet. Hold, good friend; I am convinced there is no rest for the wicked. All night long these dreadful noises continue; the ears are distracted with an unintelligible jargon of "croppings,"

“ledges,” “lodes,” “leads,” “indications,” “feet,” and “strikes,” and the nostrils offended with foul odors of boots, old pipes, and dirty blankets — who can doubt the locality? If the climate is more rigorous than Dante describes it — if Calypso might search in vain for Ulysses in such a motley crowd — these apparent differences are not inconsistent with the general theory of changes produced by American emigration and the sudden conglomeration of such incongruous elements.

I slept, or rather tried to sleep, at one “Zip’s,” where there were only twenty “bunks” in the room, and was fortunate in securing a bunk even there. But the great Macbeth himself, laboring under the stings of an evil conscience, could have made a better hand of sleeping than I did at Zip’s. It proved to be a general meeting-place for my San Francisco friends, and as they were all very rich in mining claims, and bent on getting still richer, they were continually making out deeds, examining titles, trading and transferring claims, discussing the purchases and prospects of the day, and exhibiting the most extraordinary “indications” yet discovered, in which one or other of them held an interest of fifty or a hundred feet, worth, say, a thousand dollars a foot. Between the cat-naps of oblivion that visited my eyes there was a constant din of “croppings” — “feet” — “fifty thousand dollars” — “struck it rich!” — “the Comstock Ledge!” — “the Billy Choller!” — “Miller on the rise!” — “Mammoth!” — “Sacramento!” — “Lady Bryant!” — “a thousand feet more!” — “great bargain” — “forty dollars a foot!” — crash! rip! bang! — “an earthquake!” — “run for your lives!”

What the deuce is the matter?

It happened thus one night. The wind was blowing in terrific gusts. In the midst of the general clatter on the subject of croppings, bargains, and indications, down came our next neighbor's house on the top of us with a terrific crash. For a moment it was difficult to tell which house was the ruin. Amidst projecting and shivered planks, the flapping of canvas, and the howling of the wind, it really seemed as if chaos had come again. But "Zip's" was well braced, and stood the shock without much damage, a slight heel and lurch to leeward being the chief result. I could not help thinking, as I turned in again after the alarm, that there could no longer be a doubt on the subject which had already occasioned me so many unpleasant reflections. It even seemed as if I smelled something like brimstone; but upon calling to Zip to know what was the matter, he informed me that he was "only dryin' the boots on the stove."

Notwithstanding the number of physicians who had already hoisted their "shingles," there was much sickness in Virginia, owing chiefly to exposure and dissipation, but in some measure to the deleterious quality of the water. Nothing more was wanting to confirm my original impressions. The water was certainly the worst ever used by man. Filtered through the Comstock Lead, it carried with it much of the plumbago, arsenic, copperas, and other poisonous minerals alleged to exist in that vein. The citizens of Virginia had discovered what they conceived to be an infallible way of "correcting it"; that is to say, it was their practice to mix a spoonful of water in half a tumbler of whisky, and then drink it. The whisky was supposed to neutralize the bad effects of the water. Sometimes it was considered good to

mix it with gin. I was unable to see how any advantage could be gained in this way. The whisky contained strychnine, oil of tobacco, tarantula juice, and various effective poisons of the same general nature, including a dash of corrosive sublimate; and the gin was manufactured out of turpentine and whisky, with a sprinkling of Prussic acid to give it flavor. For my part, I preferred taking poison in its least complicated form, and therefore adhered to the water. With hot saleratus bread, beans fried in grease, and such drink as this, it was no wonder that scores were taken down sick from day to day.

Sickness is bad enough at the best of times; but here the condition of the sick was truly pitiable. There was scarcely a tenement in the place that could be regarded as affording shelter against the piercing wind; and crowded as every tent and hovel was to its utmost capacity, it was hard even to find a vacant spot to lie down, much less sleep or rest in comfort. Many had come with barely means sufficient to defray their expenses to the diggings, in the confident belief that they would immediately strike "something rich." Or, if they failed in that, they could work a while on wages. But the highest wages here for common labor were three dollars a day, while meals were a dollar each, and lodgings the same. It was a favor to get work for "grub." Under such circumstances, when a poor fellow fell sick, his recovery could only be regarded as a matter of luck. No record of the deaths was kept. The mass of the emigration were strangers to each other, and it concerned nobody in particular when a man "pegged out," except to put him in a hole somewhere out of the way.

I soon felt the bad effects of the water. Possibly I had committed an error in not mixing it with the other poisons; but it was quite poisonous enough alone to give me violent pains in the stomach and a very severe diarrhea. At the same time, I was seized with an acute attack of rheumatism in the shoulder and neuralgic pains in the head. The complication of miseries which I now suffered was beyond all my calculations of the hardships of mining life. As yet I had struck nothing better than "Winn's Restaurant," where I took my meals. The Comstock Ledge was all very fine; but a THOUSAND DOLLARS A FOOT! Who ever had a thousand dollars to put in a running foot of ground, when not even the great Comstock himself could tell where it was running to. On the whole, I did not consider the prospect cheering.

At this period there were no laws of any kind in the district for the preservation of order. Some regulations had been established to secure the right of discovery to claimants; but they were loose and indefinite, differing in each district according to the caprice of the miners, and subject to no enforcement except that of the revolver. In some localities the original discoverer of a vein was entitled to 400 running feet; he could put down the names of as many friends as he chose at 200 feet each. Notice had to be recorded at certain places of record, designating the date and location of discovery. All "leads" were taken up with their "dips, spurs, and angles." But who was to judge of the "dips, spurs, and angles"? That was the difficulty. Every man ran them to suit himself. The Comstock Ledge was in a mess of confusion. The shareholders had the most enlarged views of its "dips, spurs, and angles"; but those who struck

croppings above and below were equally liberal in their notions; so that, in fine, everybody's spurs were running into everybody else's angles. The Cedar Hill Company were spurring the Miller Company; the Virginia Ledge was spurring the Continuation; the Dow Company were spurring the Billy Choller, and so on. It was a free fight all round, in which the dips, spurs, and angles might be represented after the pattern of a bunch of snakes.

The contention was very lively. Great hopes were entertained that when Judge Cradlebaugh arrived he would hold Court, and then there would be some hope of settling these conflicting claims. I must confess I did not share in the opinion that law would settle any dispute in which silver was concerned. The Almaden Mine case is not yet settled, and never will be as long as there are judges and juries to sit upon it, and lawyers to argue it, and silver to pay expenses. Already Virginia City was infested with gentlemen of the bar, thirsting and hungering for chances at the Comstock. If it could only be brought into Court, what a picking of bones there would be!

When the snow began to clear away there was no end to the discoveries alleged to be made every day. The Flowery Diggings, six miles below Virginia, were represented to be wonderfully rich — so rich, indeed, that the language of every speculator who held a claim there partook of the flowery character of the diggings. The whole country was staked off to the distance of twenty or thirty miles. Every hill-side was grubbed open, and even the Desert was pegged, like the sole of a boot, with stakes designating claims. Those who could not spare time to go out "prospecting" hired others, or furnished provisions and pack-

mules, and went shares. If the prospecting party struck "any thing rich," it was expected they would share it honestly; but I always fancied they would find it more profitable to hold on to that, and find some other rich lead for the resident partners.

In Virginia City a man who had been at work digging a cellar found rich indications. He immediately laid claim to a whole street covered with houses. The excitement produced by this "streak of luck" was perfectly frantic. Hundreds went to work grubbing up the ground under their own and their neighbors' tents; and it was not long before the whole city seemed in a fair way of being undermined. The famous *Winn*, as I was told, struck the richest lead of all directly under his restaurant, and was next day considered worth a million of dollars. The dips, spurs, and angles of these various discoveries covered every foot of ground within an area of six miles. It was utterly impossible that a fraction of the city could be left. Owners of lots protested in vain. The mining laws were paramount where there was no law at all. There was no security to personal property, or even to persons. He who turned in to sleep at night might find himself in a pit of silver by morning. At least it was thus when I made up my mind to escape from that delectable region; and now, four months later, I really don't know whether the great City of Virginia is still in existence, or whether the inhabitants have not found a "deeper deep, still threatening to devour."

It must not be supposed, from the general character of the population, that Virginia City was altogether destitute of men skilled in scientific pursuits. There were few, indeed, who did not profess to know something of geology; and as for assayers

and assay offices, they were almost as numerous as bar-keepers and grogeries. A tent, a furnace, half a dozen crucibles, a bottle of acid, and a hammer, generally comprised the entire establishment; but it is worthy of remark that the assays were always satisfactory. Silver, or indications of silver, were sure to be found in every specimen. I am confident some of these learned gentlemen in the assay business could have detected the precious metals in an Irish potato or a round of cheese for a reasonable consideration.

It was also a remarkable peculiarity of the country that the great "Comstock Lead" was discovered to exist in almost every locality, however remote or divergent from the original direction of the vein. I know a gentleman who certainly discovered a continuation of the Comstock forty miles from the Ophir mines, and at an angle of more than sixty degrees. But how could the enterprising adventurer fail to hit upon something rich, when every clod of earth and fragment of rock contained, according to the assays, both silver and gold? There was not a coyote hole in the ground that did not develop "indications." I heard of one lucky fellow who struck upon a rich vein, and organized an extensive company on the strength of having stumped his toe. Claims were even staked out and companies organized on "indications" rooted up by the squirrels and gophers. If they were not always indications of gold or silver, they were sure to contain copper, lead, or some other valuable mineral — plumbago or iridium, for instance. One man actually professed to have discovered "ambergris"; but I think he must have been an old whaler.

The complications of ills which had befallen me soon became

so serious that I resolved to get away by hook or crook, if it was possible to cheat the —— corporate authorities of their dues. I had not come there to enlist in the services of Mammon at such wages.

Bundling up my pack one dark morning, I paid "Zip" the customary dollar, and while the evil powers were roistering about the grog-shops, taking their early bitters, made good my escape from the accursed place. Weak as I was, the hope of never seeing it again gave me nerve; and when I ascended the first elevation on the way to Gold Hill, and cast a look back over the confused mass of tents and hovels, and thought of all I had suffered there in the brief space of a few days, I involuntarily exclaimed, "If ever I put foot in that hole again, may the——"

But perhaps I had better not use strong language till I once more get clear of the Devil's Gate.

THE COWBOY *

I

FAR back in the written records of mankind, we find that cattle were used as beasts of burden and as food. Those who cared for the herds of cattle were called cowherds. Their social rating was not, I fear, very high, and their equipment was certainly primitive. All a cowherd used or needed as equipment was the skin of some beast, which would serve both as clothing and bedding and also as a sling with which to slay, smite, or frighten away the fierce man-eating beasts from himself and his herd.

The next cowboys were the guachos or cattle-herders of South America. Their lives and methods of work with the great herds there were in some respects but little different from those of the cowherds of long ago. But the wild cattle of the pampas country could not be controlled by men on foot — and therefore horses, saddles, and that most cruel but useful invention, the bolas, were brought into their daily work.

On the North American continent, the Mexican herder or vaquero became a fixture soon after the Spaniards brought horses and cattle from Spain. Cortez, I believe, brought the first brand-

* From Cook, "Fifty Years on the Old Frontier" by special permission of the Yale University Press.

ing-irons for horses and cattle to the North American continent. These irons were used on the first domestic cattle of which we have any record here in the New World. This brand was made in the form of three Christian crosses — a large one in the center and smaller ones on each side of the upright support of the larger cross. During the centuries that the Mexican vaqueros or cowboys worked with the Spanish cattle, they became expert in handling them. When these domestic horses and cattle had multiplied and scattered they became as wild as the native animals of that time and country.

After Texas had become a part of the United States and the War of the Rebellion was ended, the American cowboy was brought into prominence. The great jungle country of southwestern Texas contained hundreds of thousands of wild Spanish cattle. The Americans who first undertook to handle these cattle for profit found that they had the task, not only of securing a market for them, but of getting Americans who could do a Mexican vaquero's work — men who were willing to take the chances and endure the hardships of long drives with the cattle to a country far to the north of the land of the Mexican vaqueros; a country inhabited by savage tribes of Indians (of whom, no doubt, many greatly exaggerated stories had been told them). This was the time when the real American cowboy, of whom so much has been said and written, was created. Their instructors in the art of cowboy work were Mexicans. Soon there was formed a nucleus of cowboys, added to rapidly as the years rolled by.

As it is my lot to have been numbered among the first of the American boys who worked with the wild cattle in the mesquite

and chaparral thickets of Texas and on the trails leading from that state, I shall relate a few remembered incidents and impressions connected with the cowboys and their lives.

The cowboy was first brought into disreputable prominence by the lawless and rowdy acts of a few of their number. Many of these who committed such acts were ex-soldiers of the War of the Rebellion — men who had seen much violence and bloodshed and seemed to enjoy it, particularly after taking a few drinks of liquor. The percentage among them of men in any way bad was, I think, as low as among any class of men with which it has been my privilege to associate. The first cowboys of Texas certainly may have *looked* bad to these who were not accustomed to such outfits as were worn by the boys when engaged in their work. (One peculiarity about the cowboy, by the way, was that he was always called a "boy," no matter how many years he had lived.) A revolver and sheath-knife were very necessary parts of a cowboy's equipment. Both these weapons had to be carried in the most get-at-able manner, for there was some danger in a cowboy's occupation. Sudden and expert work with both pistol and knife was quite likely to be required at times in the work with the cattle. These cattle were wild creatures which could not only flee from a human being like other wild animals, but could fight, and would do so as promptly as any grizzly bear I ever saw. When using a rope, or lasso (as it should be called), in the thickets where the wild cattle ranged, the cowboy usually kept one end of the lasso tied hard and fast to the horn of the saddle. This was done for the reason that if, when a rider was going full speed in pursuit of an animal and swinging his rope, the loop



The Cowboy

of the lasso should accidentally catch on some object, such as the limb of a tree or some stiff shrub, he would be likely to lose it, and might also find his hands badly burned by the rapid passage of the rope through them.

Often when a rider caught a large animal and brought it to a sudden stop by the lasso, it would turn and charge its captor. If the steer succeeded in goring the horse, perhaps this none too gentle mount would attempt to escape or throw its head down and try to buck its rider into kingdom come; in which case rider, horse, and cow-critter were likely to get into a badly tangled mess. There was just one way out of such a scrape, and that was to cut oneself free from that lasso as quickly as possible. Sometimes a rider found himself in such a predicament that he had to shoot the animal to which he had made fast, in order to save his own life. Constant practice with both knife and pistol made some of the boys very expert with these weapons.

In addition, the Comanche and Lipan Indians inhabited the cattle country of Texas at that time, and they seemed to have a liking for shooting arrows into cowboys. As the country afforded splendid opportunities for ambushing anyone engaged in catching the wild cattle of the jungles, the cowboy had to be prepared to shoot quick and straight.

The Texas cowboy carried his style of dress and equipment (which was partly Mexican) up the cattle trails with him to the northern ranges. Here it was quickly adopted by the boys from the eastern states who came to work with the cattle when the North Middle West became a cow country. The Texas custom of tying a lasso to the horn of the saddle was dropped in the

north, because it was not necessary in a plains country. The California style of lasso (which was twice the length of that used in the brush country of Texas) was adopted there. A few round turns taken about his saddle-horn would hold a lassoed beast; and if for any reason things went wrong, the turns of the rope could be quickly thrown off. Should an animal get loose from its captor, it could easily be caught again, for it could not well get out of sight in that open country. In the brush country conditions were different. Should a rider there ever lose sight of a cow after it had captured his rope, the chances were good that he would never see either cow or rope again.

Texas cowboys had their own style of saddle and of riding a bucking horse. The cowboys on the cattle ranges of the Middle West used a California saddle-tree, usually with a double cinch, or Texas, rigging, which a California vaquero would despise. The California rider used a center-fire or broad single cinch, hung center from the rigging of his saddle. In riding a bucking horse, his saddle would be cinched well forward, the horn being well out on the animal's neck. The saddle would rock somewhat, but it would remain in a more horizontal position on a bucking horse than would a double-cinched saddle. The latter would be placed farther back on a horse, and would have but little rock to it when a cow horse was trying to spill a rider.

The California vaquero would lean well forward when riding a bad pitching horse, whereas the Texas rider of the old school would sit with only one leg thrown across the saddle, or else lean back. When lassoing wild stock with a single-rigged California saddle it would be necessary to have it cinched very tightly to

prevent its turning. Double-rigged saddles, or those with both a front and back cinch, did not require this. The comfort of a horse was not greatly considered by many of the old-time Mexican vaqueros. I think the Texas cowboy's idea of leniency toward his mount helped many an old cow horse out of the misery of wearing a tight corset.

The cowherds of the olden times left little, if any, record of whatever natures or dispositions they may have possessed. The stories of the gentle shepherd lads of those days have been handed down in song and story. Shepherds of whom we have all read were allowed to follow the Star of Bethlehem to the spot where it poised over the manger. As yet, the cowboy never has been glorified to any such extent.

Few, if any, of the first of the old Texas cowboys were men who had had the benefit of a college education. Not long after the ranges of the North were fairly well stocked with the Texas cattle, the business offered such inducements to men from the East — men who had capital — that soon a fad for starting a cattle ranch in the West was created. Theodore Roosevelt, the Oelrichs brothers, and other well-known men came from as far east as New York City and Boston and established cattle ranches in Wyoming, Montana, and South Dakota; others — among them the Marquis De Mores and Sir Horace Plunkett — actually came from across the Atlantic. These ranches soon brought many young college fellows from the East and abroad, for whom the life on the range and with the roundups, the excellent big-game hunting, and the general excitement offered many attractions. Soon many men could be met on the ranges of the West who

were graduates of our greatest educational institutions. To meet such men on a range, and find them wearing a cowboy outfit down to the last detail, or decked out à la California vaquero, with fancy expensive silver spurs and bridle bits, became a common experience. Theodore Roosevelt — our own Teddy — and a few other writers about western life, such as Owen Wister, author of *The Virginian*, put a little halo upon the cowboy's head that exists to this date — enough of a halo, at least, so that cowboys are still in demand for Wild West shows and motion picture camps and studios. The real life of the cowboy on the range has changed greatly all over the West. Lasso, gun, and knife — especially the gun and the sheath-knife — are no longer much in evidence. A forty-five caliber hammer, a sack of fence-staples, and a wire cutter, splicer, and staple puller combined are all the tools needed by the modern cowboy.

The simple life led on the range by the old-time boys who lived entirely in the open, away from stuffy bunkhouses and fancy chuck-wagons loaded with canned goods, was, I think, far better than that followed later on by those who came under the changed conditions of the business. Life near to nature, devoid of excesses or frills, tends to make men in every sense of the word. A large percentage of the boys I have known — those of the old school, at least — were honest and true as steel to their employers, generous to a fault if such a thing can be, and always respectful to women and to the aged of either sex.

The cowboy, during the very early stages of his existence, had to endure greater hardships than any other class of men who lived frontier lives. Soldiers, freighters, hunters, and trap-

pers could, on most occasions, protect themselves in some manner, or to some extent at least, from bad storms. But the real cowboy would not desert a herd in order to protect himself from heavy weather. Many have gone to their deaths in blizzards, tornadoes, and bad thunderstorms by staying with the herds. Many a boy whom I have seen shivering with cold and drenched by rain in some awful hailstorm has shouted at me between chattering teeth, "Nobody out, and nobody going out!"

Great muscular strength and a knowledge of scientific boxing and wrestling were not considered indispensable requirements among those who worked with cattle during the early days on Texas cattle trails. Fist-fights, which were engaged in among soldiers of the regular army, freighting outfits, and men following other vocations, were called "dog fights" by the cowboys. Fighting "dog style" was of such rare occurrence among cowboys that in all the time I followed that life I never saw one instance in which men threw down all weapons and engaged in a slugging match in order to settle any dispute or to demonstrate their strength or nerve. But skill in the use of the weapons then carried, from lasso to butcher knife, was considered an accomplishment. I have mentioned the lasso as a weapon for the reason that, in the early days of vaquero life in the jungles of the Southland, duels to the death were fought with lassos. A realistic combat of that kind, engaged in by two expert vaqueros mounted on well-trained cow horses, would make an interesting picture on the screen and give a more truthful representation of a combat between the early-day cowboys than the pictures showing a

bunch of them engaged in a barroom set-to, punching the spots off each other.

As nearly as I can remember, the chief themes of conversation about the old campfires in cow camps were of the cut-shoot-and-gamble order. The wonderful exploits of this sort performed by a few well-known characters in Texas put them upon a pedestal for a time, and got them admired by many cowboys and a few other sorts of people. If anyone were to go to the trouble of looking over the list of names of those cowboy ideal fighting men and tracing them to their finish, the facts would show that with very few exceptions their lives were punched out by cold lead. To put a head on a man so that he "could eat hay like a horse," by rapping him over the skull with a six-shooter, was considered high art all over the West at one period. It was not considered a disgrace to engage in a combat of that sort when the crowded conditions of some dance hall or barroom would cause a gun fighter to shoot several of his friends in order to slay his antagonist with a fire of lead.

The uninitiated are prone to think that the vocation of the cowboy was a continuous experience of excitement, dangers, and lawlessness; that his arrival in the small Western towns gave the timid inhabitants much alarm and afforded infinite amusement to some who had no interests at stake, when he proceeded to shoot up the town. In many Western towns, the cowboys certainly indulged in some drinking, gambling, shooting, and other vices. Such scenes were common to the life on the frontier. But they did not form the principal purposes of the business life of those engaged in the cattle and other industries, and they were merely

incidental to the main process of affairs, which was steadily grinding the rough and savage material of the times and localities into the more symmetrical and refined forms of civilized existence.

The sunshine and winds of the prairie aided, I think, in developing men naturally self-reliant. In all classes of men there were drags — “scrubs” — who managed to ride along by some means on the shoulders of the good ones. Some of the more fancy-looking ones were not of the greatest value to their employers. They were often fair-weather sailors, with no pride when it came to doing unpleasant tasks well, however much they had of another sort of pride which would make them die game in a saloon brawl.

I look with pride upon those of the old cowboys who have always done good work, whether on the range, as governors of states, or in the presidential chair. The movie picture and Wild West Show cowboys may continue to live on for many generations; but the cowboys who are left of the days when there was not a wire fence on the range between Corpus Christi and Assiniboine are now wearing many silver threads in their hair — if perchance they have not been blessed by old Father Time with a marble top to adorn their brain-boxes.

I hope that every one of those old boys who may happen to read what I have written about cowboys will feel that I have at least hit some of the high ground of truth.

II

FROM "BUFFALO DAYS" *

A general round-up takes place during the spring and autumn. This is the time when every man has to work. It is exciting, but save for the lack of sleep it is not exhausting, although to sit in the saddle from twelve to fifteen hours a day is certainly tiresome.

Each cowboy has his own "string" of eight or nine ponies, one to be used for the morning work and one for the afternoon. Each animal, therefore, would get a three days' rest before being used again. Separate ponies were also kept for night herding. The spring and early round-ups were especially to get the cattle back on the ranges, count them and brand the calves. There is much hard work and some risk in a round-up and also much fun. The meeting place was appointed where all the cattlemen gathered to make their plans and appoint a foreman or captain of the round-up. His authority was law. Each outfit was notified what section of the country it should cover. Usually every stockman had his own wagon. Some of the smaller outfits combined and in that way effected quite a saving. Each cattleman had his own range, where he endeavored to retain his cattle by line riders. There was an unwritten law that no cattleman should interfere with another's range. The cattle wandered off, to a

* By Col. Homer W. Wheeler, Copyright 1925, used by special permission of the publishers, The Bobbs-Merrill Company.

great extent, but still kept on their ranges, which might cover several square miles.

The grand round-ups usually commenced at the source of some valley or stream. All the different outfits gathered there with their grub wagons, each carrying food and bedding. Each wagon was drawn by two or four horses and was driven by the cook. The men were called about three o'clock in the morning by the cook crying, "Come and get it." All hands turned out immediately. Dressing was a simple affair, after which each man rolled and corded his bedding. If he didn't the cook would leave it behind and he would be without it for the rest of the trip. When dressed, each man went to the fire, where he picked out a tin cup, tin plate, knife and fork and helped himself to the coffee and what food there was, squatting or standing as best suited him. Dawn was probably breaking by this time and the night wranglers were bringing in the pony herd.

The men ran ropes from the wagons at right angles to one another and into this rope corral the horses were driven. Usually a skilled roper would catch the ponies, for, if a man was unskilled and roped the wrong horse, or roped one in the wrong place, there was a chance that the whole herd would stampede.

Every man saddled and bridled his own animal and sometimes there was tall bucking, to the merriment of the crowd. It was bad taste to "go to leather" — that is, for a rider to grab the saddlehorn to steady himself under such conditions. As soon as the men were all saddled up the whole outfit started on the long circuit.

Usually, the foreman who had charge of a wagon was put in

charge of several men by the round-up captain. He might keep his men together until they had gone twelve or fifteen miles from camp and then direct them in couples to take in certain sections of country. They would gather all the cattle they could find and gradually drive them to the meeting-place. Accompanying each wagon were usually eight or ten riders, while the extra horses were driven by two of the men who were known as "wranglers." These had charge of the pony herd day and night. These men were fine horsemen, accustomed to riding half-broken animals at any speed over any sort of country, either by day or night. They wore flannel shirts with loose handkerchiefs knotted around their necks, broad hats, and boots with jingling spurs. Leather "chaps" protected their legs in riding through brushy country or cactus patches.

A morning ride might last six or eight hours, sometimes longer. Each man had to take his turn at night guarding. The captain of the round-up assigned the guards, or notified the foreman of a wagon to do it. Guards stood for two hours, the night herders usually being on duty from eight o'clock in the evening until four in the morning, when the night herders were relieved by the day herders.

There was a great deal of rough play, and as the men all carried revolvers — for usually there was a "bad man" among them — there was now and then a shooting affair. A man who was a coward or who shirked his work, had a hard time. No man could afford to let himself be bullied or treated as a butt; on the other hand, if any one was looking for a fight he was certain to be accommodated.

The round-up having begun, the outfits proceeded downstream, driving in the cattle from both sides of the valley until they reached a home station. All the cattle, consisting of several thousand, were rounded up many times. Then each owner cut out his own brand. There might be several cuttings-out by cattlemen who had adjoining ranches. These herds were held by several cowpunchers, while only a few of the herders who worked for the owners were allowed to do the cutting out. These were special men, well up in reading brands and with keen eyes, for in the springtime the hair on the cattle is yet long and it requires good eyesight to make out the different brands. However, these men become so skilful at the business that they know the cattle belonging to their outfit by their looks. If a cow has a calf that has become separated from its mother she is allowed to remain in the herd until she has located her offspring. When the cattle are being gathered it quite often happens that cows will hide their calves in secluded places, leaving one of their number to guard them while the mothers go for water.

One of the greatest losses of the cattleman was occasioned by wolves. Large rewards were offered for the scalps of wolves, coyotes or mountain lions. In large herds one occasionally saw animals minus their tails. This was done by the wolves in trying to pull down the animal, as when hungry these fierce brutes will resort to any method to kill a calf or young steer.

On the owner's range he was allowed to cut out the mavericks and unbranded yearlings. The outfits took turns in furnishing meat for the different organizations. The beef killed was usually the mavericks. The word "maverick" originated from a

man by that name who was in Texas, during the Civil War, where there were thousands of cattle without owners and therefore unbranded. Samuel A. Maverick, of San Antonio, was one of the first men to go into the business of gathering these loose cattle and branding them. He was formerly from South Carolina, a runaway boy. He had joined an expedition of about twenty men which invaded Mexico at the town of Mier, prior to the Mexican War and was captured there. The Mexicans killed many of them, choosing those to be shot by lot. Ten white beans and ten black ones would be placed in a sack. The unfortunate men who drew the black beans were immediately shot.

Samuel Maverick began locating land soon after the war and became the largest land owner in Texas, if not in the United States. He owned more cattle on the free public range than any other man in the Lone Star State. In 1861 nearly all the men went into the war. Maverick's cattle ran wild on the range and when the war closed there were tens of thousands of cattle that had been bred in the four years.

Maverick was the greatest claimant of these wild cattle and marked them with his brand wherever caught. Other owners and even men who had never owned cattle would brand with their own marks such cattle as they caught unbranded. It thus became the custom among cattlemen using a free range to stamp as their own any unbranded cattle they found during the round-up. To this day these stray cattle are known as "mavericks."

The men occupied in cutting out the cattle worked each animal carefully to the edge of the herd and there, with a sudden

dash, drove it out at a run. Many times an animal was anxious to break back and rejoin the herd.

The writer while in the Indian Territory at a round-up saw a peculiar feat. A steer had been acting badly, seemingly bound to return to the herd after having been cut out. Cattle dislike being alone and it is no easy matter to hold the first four or five that are cut out. After a few are together they are contented. This particular steer while trying to rejoin the herd was roped by a skilled puncher. His lariat caught the animal around the horns. The cowboy's horse stopped suddenly, the rope tightened and over the steer went, turning a complete somersault. At first it was thought the animal's neck had been broken. The puncher slackened his rope, whereupon the steer arose, shook its head and quietly went back to the "cut." That particular animal gave no further trouble.

When the owner of a ranch had cut out all his cattle he began to brand, or possibly he waited until the round-up was entirely over. The branding was the hardest part of the work, for the branding-irons have to be kept on the fire until they are red-hot. The calves were roped and thrown and the hot irons were placed on them until the hair was burned through. It was necessary for the brander to be very careful not to burn too deeply or a running sore might develop. The largest cattle were usually driven through a chute and as they passed through the iron would be placed against them. This is an easier method than to throw the animal; the latter method is hard on the horse as well as the man. If the animal is thrown, however, the branding is usually a better job.

To throw an animal, one of the men roped it around the horns, another man by the hind legs, this latter being known as "heeling." The ropers then pulled in opposite directions, which straightened out the animal. Another man seized it by the tail and pulled it over on its side, when the brand was applied.

Some very laughable things occur during this work. The writer was responsible for one which was extremely funny for the audience but not for the victim. I was obliged to rebrand some of my cattle. I went down to the butcher corral while my men were at work (at least, supposed to be) but when I arrived they were all sitting on the fence. I told them I was not paying them to hold down the fence boards. They told me a mad cow had driven them out of the corral. I laughed and said, "Let me have a rope and I'll show you how to do it; there is no danger." There were two or more snubbing-posts in the corral, and the cow was frothing at the mouth, pawing and acting in a fighting mood. My idea was to rope the cow and if she came for me I would jump behind one of the posts or climb the fence. It was a high board fence and rather hard to get over. Taking the rope, I entered the corral, made a cast and by good luck roped her around the horns the first throw. Before I could pass the rope around the snubbing post, however, she came for me full speed, "head down and tail a-rising!" There was a hog pen in one corner of the corral, and I made for that. I didn't pause to put my hands on the fence but took a header over the top board, landing in a mess of filth. When I staggered to my feet I was a sight! Luckily, no bones were broken. The men were laughing fit to kill. They afterward told me that while I was in the air the cow

struck the fence full tilt. The laugh was on me and I had to go to the house and change my clothes. I sent the men a keg of beer and didn't go to the corral again that day.

In driving cattle into a corral there were often some that managed to escape from day to day, remaining out to the very last and being very hard to run in. I had one of the most knowing cow ponies I ever saw, which I rode for years. One season we had about cleaned up our work, making our last drive into the yard, and one of the steers had broken away several times. I was bound to drive it in, as I wanted to rebrand it. I took after the steer as fast as I could ride and had him near the entrance of the corral, when he turned quickly. "Monk," my pony, turned fully as quickly. The cinch broke and off I went, saddle and all rolling against the fence. "Monk" never stopped but just kept after the steer, turned him and ran him into the corral, stopping at the entrance and looking around as much as to say, "I didn't need your assistance."

Another time we were letting a bull out of the chute after branding him. I had purchased several bulls from a passing herd on its way to Colorado and was branding the bunch. Fred Slagle, the post blacksmith, was assisting me. His business was to let the bull out of the chute. As one animal left the pen he took after Fred. The latter, not having time to jump the fence, was in a serious predicament. The bull was right at his heels when Fred's dog grabbed the animal by the nose, which saved the "Dutchman." I never could get Slagle to help me again.

THE RIVER-PILOT

MARK TWAIN *

WHAT with lying on the rocks four days at Louisville, and some other delays, the poor old *Paul Jones* fooled away about two weeks in making the voyage from Cincinnati to New Orleans. This gave me a chance to get acquainted with one of the pilots, and he taught me how to steer the boat, and thus made the fascination of river life more potent than ever for me.

It also gave me a chance to get acquainted with a youth who had taken deck passage — more's the pity; for he easily borrowed six dollars of me on a promise to return to the boat and pay it back to me the day after we should arrive. But he probably died or forgot, for he never came. It was doubtless the former, since he had said his parents were wealthy, and he only travelled deck passage because it was cooler.¹

I soon discovered two things. One was that a vessel would not be likely to sail for the mouth of the Amazon under ten or twelve years; and the other was that the nine or ten dollars still

* From "Life on the Mississippi." By express permission of the Mark Twain Company, the Trustees of the Estate of Samuel L. Clemens, and Harper & Brothers, Publishers.

¹ "Deck" passage — *i. e.*, steerage passage.



The River Pilot

left in my pocket would not suffice for so impossible an exploration as I had planned, even if I could afford to wait for a ship. Therefore it followed that I must contrive a new career. The *Paul Jones* was now bound for St. Louis. I planned a siege against my pilot, and at the end of three hard days he surrendered. He agreed to teach me the Mississippi River from New Orleans to St. Louis for five hundred dollars, payable out of the first wages I should receive after graduating. I entered upon the small enterprise of "learning" twelve or thirteen hundred miles of the great Mississippi River with the easy confidence of my time of life. If I had really known what I was about to require of my faculties, I should not have had the courage to begin. I supposed that all a pilot had to do was to keep his boat in the river, and I did not consider that that could be much of a trick, since it was so wide.

The boat backed out from New Orleans at four in the afternoon, and it was "our watch" until eight. Mr. Bixby, my chief, "straightened her up," ploughed her along past the sterns of the other boats that lay at the Levee, and then said, "Here, take her; shave those steamships as close as you'd peel an apple." I took the wheel, and my heart-beat fluttered up into the hundreds; for it seemed to me that we were about to scrape the side off every ship in the line, we were so close. I held my breath and began to claw the boat away from the danger; and I had my own opinion of the pilot who had known no better than to get us into such peril, but I was too wise to express it. In half a minute I had a wide margin of safety intervening between the *Paul Jones* and the ships; and within ten seconds more I was set aside in

disgrace, and Mr. Bixby was going into danger again and flaying me alive with abuse of my cowardice. I was stung, but I was obliged to admire the easy confidence with which my chief loafed from side to side of his wheel, and trimmed the ships so closely that disaster seemed ceaselessly imminent. When he had cooled a little he told me that the easy water was close ashore and the current outside, and therefore we must hug the bank, up-stream, to get the benefit of the former, and stay well out, down-stream, to take advantage of the latter. In my own mind I resolved to be a down-stream pilot and leave the upstreaming to people dead to prudence.

Now and then Mr. Bixby called my attention to certain things. Said he, "This is Six-Mile Point." I assented. It was pleasant enough information, but I could not see the bearing of it. I was not conscious that it was a matter of any interest to me. Another time he said, "This is Nine-Mile Point." Later he said, "This is Twelve-Mile Point." They were all about level with the water's edge; they all looked about alike to me; they were monotonously unpicturesque. I hoped Mr. Bixby would change the subject. But no; he would crowd up around a point, hugging the shore with affection, and then say: "The slack water ends here, abreast this bunch of China-trees; now we cross over." So he crossed over. He gave me the wheel once or twice, but I had no luck. I either came near chipping off the edge of a sugar plantation, or I yawed too far from shore, and so dropped back into disgrace again and got abused.

The watch was ended at last, and we took supper and went

to bed. At midnight the glare of a lantern shone in my eyes, and the night watchman said:

“Come, turn out!”

And then he left. I could not understand this extraordinary procedure; so I presently gave up trying to, and dozed off to sleep. Pretty soon the watchman was back again, and this time he was gruff. I was annoyed. I said:

“What do you want to come bothering around here in the middle of the night for? Now, as like as not, I’ll not get to sleep again to-night.”

The watchman said:

“Well, if this an’t good, I’m blessed.”

The “off-watch” was just turning in, and I heard some brutal laughter from them, and such remarks as “Hello, watchman! an’t the new cub turned out yet? He’s delicate, likely. Give him some sugar in a rag, and send for the chambermaid to sing ‘Rock-a-by, Baby,’ to him.”

About this time Mr. Bixby appeared on the scene. Something like a minute later I was climbing the pilot-house steps with some of my clothes on and the rest in my arms. Mr. Bixby was close behind, commenting. Here was something fresh — this thing of getting up in the middle of the night to go to work. It was a detail in piloting that had never occurred to me at all. I knew that boats ran all night, but somehow I had never happened to reflect that somebody had to get up out of a warm bed to run them. I began to fear that piloting was not quite so romantic as I had imagined it was; there was something very real and worklike about this new phase of it.

It was a rather dingy night, although a fair number of stars were out. The big mate was at the wheel, and he had the old tub pointed at a star and was holding her straight up the middle of the river. The shores on either hand were not much more than half a mile apart, but they seemed wonderfully far away and ever so vague and indistinct. The mate said:

"We've got to land at Jones's plantation, sir."

The vengeful spirit in me exulted. I said to myself, "I wish you joy of your job, Mr. Bixby; you'll have a good time finding Mr. Jones's plantation such a night as this; and I hope you never *will* find it as long as you live."

Mr. Bixby said to the mate:

"Upper end of the plantation, or the lower?"

"Upper."

"I can't do it. The stumps there are out of water at this stage. It's no great distance to the lower, and you'll have to get along with that."

"All right, sir. If Jones don't like it, he'll have to lump it, I reckon."

And then the mate left. My exultation began to cool and my wonder to come up. Here was a man who not only proposed to find this plantation on such a night, but to find either end of it you preferred. I dreadfully wanted to ask a question, but I was carrying about as many short answers as my cargo-room would admit of, so I held my peace. All I desired to ask Mr. Bixby was the simple question whether he was ass enough to really imagine he was going to find that plantation on a night when all plantations were exactly alike and all of the same color. But

I held in. I used to have fine inspirations of prudence in those days.

Mr. Bixby made for the shore and soon was scraping it, just the same as if it had been daylight. And not only that, but singing:

“Father in heaven, the day is declining,” etc.

It seemed to me that I had put my life in the keeping of a peculiarly reckless outcast. Presently he turned on me and said:

“What’s the name of the first point above New Orleans?”

I was gratified to be able to answer promptly, and I did. I said I didn’t know.

“Don’t *know*?”

This manner jolted me. I was down at the foot again, in a moment. But I had to say just what I had said before.

“Well, you’re a smart one!” said Mr. Bixby. “What’s the name of the *next* point?”

Once more I didn’t know.

“Well, this beats any thing. Tell me the name of *any* point or place I told you.”

I studied a while and decided that I couldn’t.

“Look here! What do you start out from, above Twelve-Mile Point, to cross over?”

“I — I — don’t know.”

“You — you — don’t know?” mimicking my drawling manner of speech. “What *do* you know?”

“I — I — nothing, for certain.”

“By the great Cæsar’s ghost, I believe you! You’re the stupidest dunderhead I ever saw or ever heard of, so help me Moses!

The idea of *you* being a pilot — *you!* Why, you don't know enough to pilot a cow down a lane."

Oh, but his wrath was up! He was a nervous man, and he shuffled from one side of his wheel to the other as if the floor was hot. He would boil a while to himself, and then overflow and scald me again.

"Look here! What do you suppose I told you the names of those points for?"

I tremblingly considered a moment, and then the devil of temptation provoked me to say:

"Well — to — to — be entertaining, I thought."

This was a red rag to the bull. He raged and stormed so (he was crossing the river at the time) that I judge it made him blind, because he ran over the steering-oar of a trading-scow. Of course the traders sent up a volley of red-hot profanity. Never was a man so grateful as Mr. Bixby was; because he was brimful, and here were subjects who could *talk back*. He threw open a window, thrust his head out, and such an irruption followed as I never had heard before. The fainter and farther away the scowmen's curses drifted, the higher Mr. Bixby lifted his voice and the weightier his adjectives grew. When he closed the window he was empty. You could have drawn a seine through his system and not caught curses enough to disturb your mother with. Presently he said to me in the gentlest way:

"My boy, you must get a little memorandum-book; and every time I tell you a thing, put it down right away. There's only one way to be a pilot, and that is to get this entire river by heart. You have to know it just like A B C."

That was a dismal revelation to me; for my memory was never loaded with any thing but blank cartridges. However, I did not feel discouraged long. I judged that it was best to make some allowances, for doubtless Mr. Bixby was "stretching." Presently he pulled a rope and struck a few strokes on the big bell. The stars were all gone now, and the night was as black as ink. I could hear the wheels churn along the bank, but I was not entirely certain that I could see the shore. The voice of the invisible watchman called up from the hurricane deck:

"What's this, sir?"

"Jones's plantation."

I said to myself, "I wish I might venture to offer a small bet that it isn't." But I did not chirp. I only waited to see. Mr. Bixby handled the engine-bells, and in due time the boat's nose came to the land, a torch glowed from the forecastle, a man skipped ashore, a darky's voice on the bank said, "Gimme de k'yarpetbag, Mass' Jones," and the next moment we were standing up the river again, all serene. I reflected deeply a while, and then said — but not aloud — "Well, the finding of that plantation was the luckiest accident that ever happened; but it couldn't happen again in a hundred years." And I fully believed it *was* an accident, too.

By the time we had gone seven or eight hundred miles up the river, I had learned to be a tolerably plucky upstream steersman, in daylight, and before we reached St. Louis I had made a trifle of progress in night-work, but only a trifle. I had a note-book that fairly bristled with the names of towns, "points," bars, islands, bends, reaches, etc.; but the information was to be found

only in the note-book — none of it was in my head. It made my heart ache to think I had only got half of the river set down; for as our watch was four hours off and four hours on, day and night, there was a long four-hour gap in my book for every time I had slept since the voyage began.

My chief was presently hired to go on a big New Orleans boat, and I packed my satchel and went with him. She was a grand affair. When I stood in her pilot-house I was so far above the water that I seemed perched on a mountain; and her decks stretched so far away, fore and aft, below me, that I wondered how I could ever have considered the little *Paul Jones* a large craft. There were other differences, too. The *Paul Jones's* pilot-house was a cheap, dingy, battered rattle-trap, cramped for room; but here was a sumptuous glass temple; room enough to have a dance in; showy red and gold window curtains; an imposing sofa; leather cushions and a back to the high bench where visiting pilots sit, to spin yarns and "look at the river"; bright, fanciful "cuspadores," instead of a broad wooden box filled with sawdust; nice new oilcloth on the floor; a hospitable big stove for winter; a wheel as high as my head, costlily with inlaid work; a wire tiller-rope; bright brass knobs for the bells; and a tidy, white-aproned, black "texas-tender," to bring up tarts and ices and coffee during mid-watch, day and night. Now this was "something like"; and so I began to take heart once more to believe that piloting was a romantic sort of occupation after all. The moment we were under way I began to prowls about the great steamer and fill myself with joy. She was as clean and as dainty as a drawing-room; when I looked down her long, gilded saloon,

it was like gazing through a splendid tunnel; she had an oil-picture, by some gifted sign-painter, on every state-room door; she glittered with no end of prism-fringed chandeliers; the clerk's office was elegant, the bar was marvellous, and the barkeeper had been barbered and upholstered at incredible cost. The boiler-deck (*i. e.*, the second story of the boat, so to speak), was as spacious as a church, it seemed to me; so with the fore-castle; and there was no pitiful handful of deck-hands, firemen, and roustabouts down there, but a whole battalion of men. The fires were fiercely glaring from a long row of furnaces, and over them were eight huge boilers! This was unutterable pomp. The mighty engines—but enough of this. I had never felt so fine before. And when I found that the regiment of natty servants respectfully “sir’d” me, my satisfaction was complete.

When I returned to the pilot-house St. Louis was gone, and I was lost. Here was a piece of river which was all down in my book, but I could make neither head nor tail of it: you understand, it was turned around. I had seen it when coming upstream, but I had never faced about to see how it looked when it was behind me. My heart broke again, for it was plain that I had got to learn this troublesome river *both ways*.

The pilot-house was full of pilots, going down to “look at the river.” What is called the “upper river” (the two hundred miles between St. Louis and Cairo, where the Ohio comes in) was low; and the Mississippi changes its channel so constantly that the pilots used to always find it necessary to run down to Cairo to take a fresh look, when their boats were to lie in port a week; that is, when the water was at a low stage. A deal of

this "looking at the river," was done by poor fellows who seldom had a berth, and whose only hope of getting one lay in their being always freshly posted and therefore ready to drop into the shoes of some reputable pilot, for a single trip, on account of such pilot's sudden illness, or some other necessity. And a good many of them constantly ran up and down inspecting the river, not because they ever really hoped to get a berth, but because (they being guests of the boat) it was cheaper to "look at the river" than stay ashore and pay board. In time these fellows grew dainty in their tastes, and only infested boats that had an established reputation for setting good tables. All visiting pilots were useful, for they were always ready and willing, winter or summer, night or day, to go out in the yawl and help buoy the channel or assist the boat's pilots in any way they could. They were likewise welcome because all pilots are tireless talkers, when gathered together, and as they talk only about the river they are always understood and are always interesting. Your true pilot cares nothing about anything on earth but the river, and his pride in his occupation surpasses the pride of kings.

We had a fine company of these river inspectors along this trip. There were eight or ten, and there was abundance of room for them in our great pilot-house. Two or three of them wore polished silk hats, elaborate shirt-fronts, diamond breastpins, kid gloves, and patent-leather boots. They were choice in their English, and bore themselves with a dignity proper to men of solid means and prodigious reputation as pilots. The others were more or less loosely clad, and wore upon their heads tall felt cones that were suggestive of the days of the Commonwealth.

I was a cipher in this august company, and felt subdued, not to say torpid. I was not even of sufficient consequence to assist at the wheel when it was necessary to put the tiller hard down in a hurry; the guest that stood nearest did that when occasion required — and this was pretty much all the time, because of the crookedness of the channel and the scant water. I stood in a corner; and the talk I listened to took the hope all out of me. One visitor said to another:

“Jim, how did you run Plum Point, coming up?”

“It was in the night, there, and I ran it the way one of the boys on the *Diana* told me; started out about fifty yards above the wood-pile on the false point, and held on the cabin under Plum Point till I raised the reef — quarter less twain — then straightened up for the middle bar till I got well abreast the old one-limbed cotton-wood in the bend, then got my stern on the cotton-wood, and head on the low place above the point, and came through a-booming — nine and a half.”

“Pretty square crossing, an’t it?”

“Yes, but the upper bar’s working down fast.”

Another pilot spoke up and said:

“I had better water than that, and ran it lower down; started out from the false point — mark twain — raised the second reef abreast the big snag in the bend, and had quarter less twain.”

One of the gorgeous ones remarked:

“I don’t want to find fault with your leadsmen, but that’s a good deal of water for Plum Point, it seems to me.”

There was an approving nod all around as this quiet snub dropped on the boaster and “settled” him. And so they went

on talk-talk-talking. Meantime, the thing that was running in my mind was, "Now, if my ears hear aright, I have not only to get the names of all the towns and islands and bends, and so on, by heart, but I must even get up a warm personal acquaintance-ship with every old snag and one-limbed cotton-wood and obscure woodpile that ornaments the banks of this river for twelve hundred miles; and more than that, I must actually know where these things are in the dark, unless these guests are gifted with eyes that can pierce through two miles of solid blackness. I wish the piloting business was in Jericho and I had never thought of it."

At dusk Mr. Bixby tapped the big bell three times (the signal to land), and the captain emerged from his drawing-room in the forward end of the "texas," and looked up enquiringly. Mr. Bixby said:

"We will lay up here all night, captain."

"Very well, sir."

That was all. The boat came to shore and was tied up for the night. It seemed to me a fine thing that the pilot could do as he pleased, without asking so grand a captain's permission. I took my supper and went immediately to bed, discouraged by my day's observations and experiences. My late voyage's note-book-
ing was but a confusion of meaningless names. It had tangled me all up in a knot every time I had looked at it in the daytime. I now hoped for respite in sleep; but no, it revelled all through my head till sunrise again, a frantic and tireless nightmare.

Next morning I felt pretty rusty and low-spirited. We went booming along, taking a good many chances, for we were anxious to "get out of the river" (as getting out to Cairo was called)

before night should overtake us. But Mr. Bixby's partner, the other pilot, presently grounded the boat, and we lost so much time getting her off that it was plain the darkness would overtake us a good long way above the mouth. This was a great misfortune, especially to certain of our visiting pilots, whose boats would have to wait for their return, no matter how long that might be. It sobered the pilot-house talk a good deal. Coming up-stream, pilots did not mind low water or any kind of darkness; nothing stopped them but fog. But down-stream work was different; a boat was too nearly helpless, with a stiff current pushing behind her; so it was not customary to run down-stream at night in low water.

There seemed to be one small hope, however; if we could get through the intricate and dangerous Hat Island crossing before night, we could venture the rest, for we would have plainer sailing and better water. But it would be insanity to attempt Hat Island at night. So there was a deal of looking at watches all the rest of the day, and a constant ciphering upon the speed we were making; Hat Island was the eternal subject; sometimes hope was high and sometimes we were delayed in a bad crossing, and down it went again. For hours all hands lay under the burden of this suppressed excitement; it was even communicated to me, and I got to feeling so solicitous about Hat Island, and under such an awful pressure of responsibility, that I wished I might have five minutes on shore to draw a good, full, relieving breath, and start over again. We were standing no regular watches. Each of our pilots ran such portions of the river as he had run

when coming up-stream, because of his greater familiarity with it; but both remained in the pilot-house constantly.

An hour before sunset Mr. Bixby took the wheel, and Mr. W. stepped aside. For the next thirty minutes every man held his watch in his hand and was restless, silent, and uneasy. At last somebody said, with doomful sigh:

"Well, yonder's Hat Island — and we can't make it."

All the watches closed with a snap, everybody sighed and muttered something about it's being "too bad, too bad — ah, if we could *only* have got here half an hour sooner!" and the place was thick with the atmosphere of disappointment. Some started to go out, but loitered, hearing no bell-tap to land. The sun dipped behind the horizon, the boat went on. Enquiring looks passed from one guest to another; and one who had his hand on the door-knob and had turned it, waited, then presently took away his hand and let the knob turn back again. We bore steadily down the bend. More looks were exchanged, and nods of surprised admiration — but no words. Insensibly the men drew together behind Mr. Bixby, as the sky darkened and one or two dim stars came out. The dead silence and sense of waiting became oppressive. Mr. Bixby pulled the cord, and two deep, mellow notes from the big bell floated off on the night. Then a pause, and one more note was struck. The watchman's voice followed, from the hurricane deck:

"Labboard lead, there! Stabboard lead!"

The cries of the leadsmen began to rise out of the distance, and were gruffly repeated by the word-passers on the hurricane deck

"M-a-r-k three! M-a-r-k three! Quarter-less-three! Half twain! Quarter twain! M-a-r-k twain! Quarter-less ——"

Mr. Bixby pulled two bell-ropes, and was answered by faint jinglings far below in the engine-room, and our speed slackened. The steam began to whistle through the gauge-cocks. The cries of the leadsmen went on — and it is a weird sound, always, in the night. Every pilot in the lot was watching now, with fixed eyes, and talking under his breath. Nobody was calm and easy but Mr. Bixby. He would put his wheel down and stand on a spoke, as the steamer swung into her (to me) utterly invisible marks — for we seemed to be in the midst of a wide and gloomy sea — he would meet and fasten her there. Out of the murmur of half-audible talk, one caught a coherent sentence now and then — such as:

"There; she's over the first reef all right!"

After a pause, another subdued voice:

"Her stern's coming down just *exactly* right, by *George!*"

"Now she's in the marks; over she goes!"

Somebody else muttered:

"Oh, it was done beautiful — *beautiful!*"

Now the engines were stopped altogether, and we drifted with the current. Not that I could see the boat drift, for I could not, the stars being all gone by this time. This drifting was the dismal work; it held one's heart still. Presently I discovered a blacker gloom than that which surrounded us. It was the head of the island. We were closing right down upon it. We entered its deeper shadow, and so imminent seemed the peril that I was likely to suffocate; and I had the strongest impulse to do

something, anything, to save the vessel. But still Mr. Bixby stood by his wheel, silent, intent as a cat, and all the pilots stood shoulder to shoulder at his back.

"She'll not make it!" somebody whispered.

The water grew shoaler and shoaler, by the leadsman's cries, till it was down to:

"Eight-and-a-half! E-i-g-h-t feet! E-i-g-h-t feet! Seven-and ——"

Mr. Bixby said warningly through his speaking tube to the engineer:

"Stand by, now!"

"Ay, ay, sir!"

"Seven-and-a-half! Seven feet! Six-and ——"

We touched bottom! Instantly Mr. Bixby set a lot of bells ringing, shouted through the tube, "*Now*, let her have it — every ounce you've got!" then to his partner, "Put her hard down! snatch her! snatch her!" The boat rasped and ground her way through the sand, hung upon the apex of disaster a single tremendous instant, and then over she went! And such a shout as went up at Mr. Bixby's back never loosened the roof of a pilot-house before!

There was no more trouble after that. Mr. Bixby was a hero that night; and it was some little time, too, before his exploit ceased to be talked about by river men.

Fully to realize the marvellous precision required in laying the great steamer in her marks in that murky waste of water, one should know that not only must she pick her intricate way through snags and blind reefs, and then shave the head of the

island so closely as to brush the overhanging foliage with her stern, but at one place she must pass almost within arm's reach of a sunken and invisible wreck that would snatch the hull timbers from under her if she should strike it, and destroy a quarter of a million dollars' worth of steamboat and cargo in five minutes, and maybe a hundred and fifty human lives into the bargain.

The last remark I heard that night was a compliment to Mr. Bixby, uttered in soliloquy and with unction by one of our guests. He said:

"By the Shadow of Death, but he's a lightning pilot!"

* * * * *

But I am wandering from what I was intending to do; that is, make plainer than perhaps appears in the previous chapters some of the peculiar requirements of the science of piloting. First of all, there is one faculty which a pilot must incessantly cultivate until he has brought it to absolute perfection. Nothing short of perfection will do. That faculty is memory. He cannot stop with merely thinking a thing is so and so; he must *know* it; for this is eminently one of the "exact" sciences. With what scorn a pilot was looked upon, in the old times, if he ever ventured to deal in that feeble phrase "I think," instead of the vigorous one "I know!" One cannot easily realize what a tremendous thing it is to know every trivial detail of twelve hundred miles of river and know it with absolute exactness. If you will take the longest street in New York, and travel up and down it, conning its features patiently until you know every house and window and lamp-post and big and little sign by heart, and know

them so accurately that you can instantly name the one you are abreast of when you are set down at random in that street in the middle of an inky black night, you will then have a tolerable notion of the amount and the exactness of a pilot's knowledge who carries the Mississippi River in his head. And then, if you will go on until you know every street crossing, the character, size, and position of the crossing-stones, and the varying depth of mud in each of those numberless places, you will have some idea of what the pilot must know in order to keep a Mississippi steamer out of trouble. Next, if you will take half of the signs in that long street, and *change their places* once a month, and still manage to know their new positions accurately on dark nights, and keep up with these repeated changes without making any mistakes, you will understand what is required of a pilot's peerless memory by the fickle Mississippi.

I think a pilot's memory is about the most wonderful thing in the world. To know the Old and New Testaments by heart, and be able to recite them glibly, forward or backward, or begin at random anywhere in the book and recite both ways and never trip or make a mistake, is no extravagant mass of knowledge, and no marvellous facility, compared to a pilot's massed knowledge of the Mississippi and his marvellous facility in the handling of it. I make this comparison deliberately, and believe I am not expanding the truth when I do it. Many will think my figure too strong, but pilots will not.

And how easily and comfortably the pilot's memory does its work; how placidly effortless is its way; how *unconsciously* it lays up its vast stores, hour by hour, day by day, and never loses

or mislays a single valuable package of them all! Take an instance. Let a leadsman cry, "Half twain! half twain! half twain! half twain! half twain!" until it becomes as monotonous as the ticking of a clock; let conversation be going on all the time, and the pilot be doing his share of the talking, and no longer consciously listening to the leadsman; and in the midst of this endless string of half twains let a single "quarter twain!" be interjected, without emphasis, and then the half twain cry go on again, just as before: two or three weeks later that pilot can describe with precision the boat's position in the river when that quarter twain was uttered, and give you such a lot of head-marks, stern-marks, and side-marks to guide you, that you ought to be able to take the boat there and put her in that same spot again yourself! The cry of "quarter twain" did not really take his mind from his talk, but his trained faculties instantly photographed the bearings, noted the change of depth, and laid up the important details for future reference without requiring any assistance from *him* in the matter. If you were walking and talking with a friend, and another friend at your side kept up a monotonous repetition of the vowel sound A, for a couple of blocks, and then in the midst interjected an R, thus, A, A, A, A, A, R, A, A, A, etc., and gave the R no emphasis, you would not be able to state, two or three weeks afterward, that the R had been put in, nor be able to tell what objects you were passing at the moment it was done. But you could if your memory had been patiently and laboriously trained to do that sort of thing mechanically.

Give a man a tolerably fair memory to start with, and piloting will develop it into a very colossus of capability. But *only in*

the matters it is daily drilled in. A time would come when the man's faculties could not help noticing landmarks and soundings, and his memory could not help holding on to them with the grip of a vise; but if you asked that same man at noon what he had had for breakfast, it would be ten chances to one that he could not tell you. Astonishing things can be done with the human memory if you will devote it faithfully to one particular line of business.

At the time that wages soared so high on the Missouri River, my chief, Mr. Bixby, went up there and learned more than a thousand miles of that stream with an ease and rapidity that were astonishing. When he had seen each division *once* in the daytime and *once* at night, his education was so nearly complete that he took out a "daylight" license; a few trips later he took out a full pilot's license for the river.

A pilot must have a memory; but there are two higher qualities which he must also have. He must have good and quick judgment and decision, and a cool, calm courage that no peril can shake. Give a man the merest trifle of pluck to start with, and by the time he has become a pilot he cannot be unmanned by any danger a steamboat can get into; but one cannot quite say the same for judgment. Judgment is a matter of brains, and a man must *start* with a good stock of that article or he will never succeed as a pilot.

The growth of courage in the pilot-house is steady all the time, but it does not reach a high and satisfactory condition until some time after the young pilot has been "standing his own watch" alone and under the staggering weight of all the responsi-

bilities connected with the position. When an apprentice has become pretty thoroughly acquainted with the river, he goes clattering along so fearlessly with his steamboat, night or day, that he presently begins to imagine that it is *his* courage that animates him; but the first time the pilot steps out and leaves him to his own devices he finds out it was the other man's. He discovers that the article has been left out of his own cargo altogether. The whole river is bristling with exigencies in a moment; he is not prepared for them; he does not know how to meet them; all his knowledge forsakes him; and within fifteen minutes he is as white as a sheet and scared almost to death. Therefore pilots wisely train these cubs by various strategic tricks to look danger in the face a little more calmly. A favorite way of theirs is to play a friendly swindle upon the candidate.

In my preceding narrative I have tried, by going into the minutiae of the science of piloting, to carry the reader step by step to a comprehension of what the science consists of; and at the same time I have tried to show him that it is a very curious and wonderful science, too, and very worthy of his attention. If I have seemed to love my subject, it is no surprising thing, for I loved the profession far better than any I have followed since, and I took a measureless pride in it. The reason is plain: a pilot, in those days, was the only unfettered and entirely independent human being that lived in the earth. Kings are but the hampered servants of parliament and the people; parliaments sit in chains forged by their constituency; the editor of a newspaper cannot be independent, but must work with one hand tied behind him by party and patrons, and be content to utter only

half or two-thirds of his mind; no clergyman is a free man and may speak the whole truth, regardless of his parish's opinions; writers of all kinds are manacled servants of the public. We write frankly and fearlessly, but then we "modify" before we print. In truth, every man and woman and child has a master, and worries and frets in servitude; but, in the day I write of, the Mississippi pilot had *none*. The captain could stand upon the hurricane deck, in the pomp of a very brief authority, and give him five or six orders while the vessel backed into the stream, and then that skipper's reign was over. The moment that the boat was under way in the river, she was under the sole and unquestioned control of the pilot. He could do with her exactly as he pleased, run her when and whither he chose, and tie her up to the bank whenever his judgment said that that course was best. His movements were entirely free; he consulted no one, he received commands from nobody, he promptly resented even the merest suggestions. Indeed, the law of the United States forbade him to listen to commands or suggestions, rightly considering that the pilot necessarily knew better how to handle the boat than anybody could tell him. So here was the novelty of a king without a keeper, an absolute monarch who was absolute in sober truth and not by a fiction of words. I have seen a boy of eighteen* taking a great steamer serenely into what seemed almost certain destruction, and the aged captain standing mutely by, filled with apprehension but powerless to interfere. His interference, in that particular instance, might have been an excellent thing, but to permit it would have been to establish a most

* Himself.

pernicious precedent. It will easily be guessed, considering the pilot's boundless authority, that he was a great personage in the old steamboating days. He was treated with marked courtesy by the captain and with marked deference by all the officers and servants; and this deferential spirit was quickly communicated to the passengers, too. I think pilots were about the only people I ever knew who failed to show, in some degree, embarrassment in the presence of traveling foreign princes. But then, people in one's own grade of life are not usually embarrassing objects.

By long habit, pilots came to put all their wishes in the form of commands. It "gravels" me, to this day, to put my will in the weak shape of a request, instead of launching it in the crisp language of an order.

In those old days, to load a steamboat at St. Louis, take her to New Orleans and back, and discharge cargo, consumed about twenty-five days, on an average. Seven or eight of these days the boat spent at the wharves of St. Louis and New Orleans, and every soul on board was hard at work, except the two pilots; *they* did nothing but play gentleman up town, and receive the same wages for it as if they had been on duty. The moment the boat touched the wharf at either city they were ashore; and they were not likely to be seen again till the last bell was ringing and every thing in readiness for another voyage.

When a captain got hold of a pilot of particularly high reputation, he took pains to keep him. When wages were four hundred dollars a month on the Upper Mississippi, I have known a captain to keep such a pilot in idleness, under full pay, three

months at a time, while the river was frozen up. And one must remember that in those cheap times four hundred dollars was a salary of almost inconceivable splendor. Few men on shore got such pay as that, and when they did they were mightily looked up to. When pilots from either end of the river wandered into our small Missouri village, they were sought by the best and the fairest, and treated with exalted respect. Lying in port under wages was a thing which many pilots greatly enjoyed and appreciated; especially if they belonged in the Missouri River in the hey-day of that trade (Kansas times), and got nine hundred dollars a trip, which was equivalent to about eighteen hundred dollars a month.

THE LUMBERJACK

THE RIVERMAN *

STEWART EDWARD WHITE

I FIRST met him one Fourth of July afternoon in the middle eighties. The sawdust streets and high board sidewalks of the lumber town were filled to the brim with people. The permanent population, dressed in the stiffness of its Sunday best, escorted gingham wives or sweethearts; a dozen outsiders like myself tried not to be too conspicuous in a city smartness; but the great multitude was composed of the men of the woods. I sat, chair-tilted by the hotel, watching them pass. Their heavy woolen shirts crossed by the broad suspenders, the red of their sashes or leather shine of their belts, their short kersey trousers "staggered" off to leave a gap between the knee and the heavily spiked "cork boots" — all these were distinctive enough of their class, but most interesting to me were the eyes that peered from beneath their little round hats tilted rakishly askew. They were all subtly alike, those eyes. Some were black, some were brown, or gray, or blue, but all were steady and unabashed, all looked straight at you with a strange humorous blending of aggression and respect for your own business, and all without exception wrinkled at the corners with a suggestion of dry humor. In my

* From "Americans All." By special permission of the author.

half-conscious scrutiny I probably stared harder than I knew, for all at once a laughing pair of blue eyes suddenly met mine full, and an ironical voice drawled,

"Say, bub, you look as interested as a man killing snakes. Am I your long-lost friend?"

The tone of the voice matched accurately the attitude of the man, and that was quite non-committal. He stood cheerfully ready to meet the emergency. If I sought trouble, it was here to my hand; or if I needed help he was willing to offer it.

"I guess you are," I replied, "if you can tell me what all this outfit's headed for."

He thrust back his hat and ran his hand through a mop of closely cropped light curls.

"Birling match," he explained briefly. "Come on."

I joined him, and together we followed the crowd to the river, where we roosted like cormorants on adjacent piles overlooking a patch of clear water among filled booms.

"Drive just over," my new friend informed me. "Rear come down last night. Fourther July celebration. This little town will scratch fer th' tall timber along about midnight when the boys goes in to take her apart."

A half-dozen men with peavies rolled a white-pine log of about a foot and a half in diameter into the clear water, where it lay rocking back and forth, three or four feet from the boom piles. Suddenly a man ran the length of the boom, leaped easily into the air, and landed with both feet square on one end of the floating log. That end disappeared in an ankle-deep swirl of white foam, the other rose suddenly, the whole timber, projected for-

ward by the shock, drove headlong to the middle of the little pond. And the man, his arms folded, his knees just bent in the graceful nervous attitude of the circus-rider, stood upright like a statue of bronze.

A roar approved this feat.

"That's Dickey Darrell," said my informant, "Roaring Dick. He's hell *and* repeat. Watch him."

The man on the log was small, with clean beautiful haunches and shoulders, but with hanging baboon arms. Perhaps his most striking feature was a mop of reddish-brown hair that overshadowed a little triangular white face accented by two reddish-brown quadrilaterals that served as eyebrows and a pair of inscrutable chipmunk eyes.

For a moment he poised erect in the great calm of the public performer. Then slowly he began to revolve the log under his feet. The lofty gaze, the folded arms, the straight supple waist budged not by a hair's breadth; only the feet stepped forward, at first deliberately, then faster and faster, until the rolling log threw a blue spray a foot into the air. Then suddenly *slap! slap!* the heavy caulks stamped a reversal. The log came instantaneously to rest, quivering exactly like some animal that had been spurred through its paces.

"Magnificent!" I cried.

"Hell, that's nothing!" my companion repressed me, "anybody can birl a log. Watch this."

Roaring Dick for the first time unfolded his arms. With some appearance of caution he balanced his unstable footing into absolute immobility. Then he turned a somersault.

This was the real thing. My friend uttered a wild yell of applause which was lost in a general roar.

A long pike-pole shot out, bit the end of the timber, and towed it to the boom pile. Another man stepped on the log with Darrell. They stood facing each other, bent-kneed, alert. Suddenly with one accord they commenced to birl the log from left to right. The pace grew hot. Like squirrels treading a cage their feet twinkled. Then it became apparent that Darrell's opponent was gradually being forced from the top of the log. He could not keep up. Little by little, still moving desperately, he dropped back to the slant, then at last to the edge, and so off into the river with a mighty splash.

"Clean birlled!" commented my friend.

One after another a half-dozen rivermen tackled the imperturbable Dick, but none of them possessed the agility to stay on top in the pace he set them. One boy of eighteen seemed for a moment to hold his own, and managed at least to keep out of the water even when Darrell had apparently reached his maximum speed. But that expert merely threw his entire weight into two reversing stamps of his feet, and the young fellow dove forward as abruptly as though he had been shied over a horse's head.

The crowd was by now getting uproarious and impatient of volunteer effort to humble Darrell's challenge. It wanted the best, and at once. It began, with increasing insistence, to shout a name.

"Jimmy Powers!" it vociferated, "Jimmy Powers!"

And then by shamefaced bashfulness, by profane protest, by

muttered and comprehensive curses I knew that my companion on the other pile was indicated.

A dozen men near at hand began to shout. "Here he is!" they cried. "Come on, Jimmy." "Don't be a high banker." "Hang his hide on the fence."

Jimmy, still red and swearing, suffered himself to be pulled from his elevation and disappeared in the throng. A moment later I caught his head and shoulders pushing toward the boom piles, and so in a moment he stepped warily aboard to face his antagonist.

This was evidently no question to be determined by the simplicity of force or the simplicity of a child's trick. The two men stood half-crouched, face to face, watching each other narrowly, but making no move. To me they seemed like two wrestlers sparring for an opening. Slowly the log revolved one way; then slowly the other. It was a mere courtesy of salute. All at once Dick birled three rapid strokes from left to right as though about to roll the log, leaped into the air and landed square with both feet on the other slant of the timber. Jimmy Powers felt the jar, and acknowledged it by a spasmodic jerk with which he counterbalanced Darrell's weight. But he was not thrown.

As though this daring and hazardous manœuvre had opened the combat, both men sprang to life. Sometimes the log rolled one way, sometimes the other, sometimes it jerked from side to side like a crazy thing, but always with the rapidity of light, always in a smother of spray and foam. The decided *spat*, *spat*, *spat* of the reversing blows from the caulked boots sounded like picket firing. I could not make out the different leads, feints,

parries, and counters of this strange method of boxing, nor could I distinguish to whose initiative the various evolutions of that log could be ascribed. But I retain still a vivid mental picture of two men nearly motionless above the waist, nearly vibrant below it, dominating the insane gyrations of a stick of pine.

The crowd was appreciative and partisan — for Jimmy Powers. It howled wildly, and rose thereby to even higher excitement. Then it forgot its manners utterly and groaned when it made out that a sudden splash represented its favorite, while the indomitable Darrell still trod the quarter-deck as champion birler for the year.

I must confess I was as sorry as anybody. I climbed down from my cormorant roost, and picked my way between the alleys of aromatic piled lumber in order to avoid the press, and cursed the little gods heartily for undue partiality in the wrong direction. In this manner I happened on Jimmy Powers himself seated dripping on a board and examining his bare foot.

“I’m sorry,” said I behind him. “How did he do it?”

He whirled, and I could see that his laughing boyish face had become suddenly grim and stern, and that his eyes were shot with blood.

“Oh, it’s you, is it?” he growled disparagingly. “Well, that’s how he did it.”

He held out his foot. Across the instep and at the base of the toes ran two rows of tiny round punctures from which the blood was oozing. I looked very inquiring.

“He corked me!” Jimmy Powers explained. “Jammed his

spikes into me! Stepped on my foot and tripped me, the ——” Jimmy Powers certainly could swear.

“Why didn’t you make a kick?” I cried.

“That ain’t how I do it,” he muttered, pulling on his heavy woolen sock.

“But no,” I insisted, my indignation mounting. “It’s an outrage! That crowd was with you. All you had to do was to say something ——”

He cut me short. “And give myself away as a damn fool — sure Mike. I ought to know Dickey Darrell by this time, and I ought to be big enough to take care of myself.” He stamped his foot into his driver’s shoe and took me by the arm, his good humor apparently restored. “No, don’t lose any hair, bub; I’ll get even with Roaring Dick.”

That night, having by the advice of the proprietor moved my bureau and trunk against the bedroom door, I lay wide awake listening to the taking of the town apart. At each especially vicious crash I wondered if that might be Jimmy Powers getting even with Roaring Dick.

The following year, but earlier in the season, I again visited my little lumber town. In striking contrast to the life of that other midsummer day were the deserted streets. The landlord knew me, and after I had washed and eaten approached me with a suggestion.

“You got all day in front of you,” said he; “why don’t you take a horse and buggy and make a visit to the big jam? Everybody’s up there more or less.”

In response to my inquiry, he replied:

"They've jammed at the upper bend, jammed bad. The crew's been picking at her for near a week now, and last night Darrell was down to see about some more dynamite. It's worth seein'. The breast of her is near thirty feet high, and lots of water in the river."

"Darrell?" said I, catching at the name.

"Yes. He's rear boss this year. Do you think you'd like to take a look at her?"

"I think I should," I assented.

The horse and I jogged slowly along a deep sand road, through wastes of pine stumps and belts of hardwood beautiful with the early spring, until finally we arrived at a clearing in which stood two huge tents, a mammoth kettle slung over a fire of logs, and drying racks about the timbers of another fire. A fat cook in the inevitable battered derby hat, two bare-armed cookees, and a chore "boy" of seventy-odd summers were the only human beings in sight. One of the cookees agreed to keep an eye on my horse. I picked my way down a well-worn trail toward the regular *clank, clank, click* of the peavies.

I emerged finally to a plateau elevated some fifty or sixty feet above the river. A half-dozen spectators were already gathered. Among them I could not but notice a tall, spare, broad-shouldered young fellow dressed in a quiet business suit, somewhat wrinkled, whose square, strong, clean-cut face and muscular hands were tanned by the weather to a dark umber-brown. In another moment I looked down on the jam.

The breast, as my landlord had told me, rose sheer from the water to the height of at least twenty-five feet, bristling and



The Lumberjack

formidable. Back of it pressed the volume of logs packed closely in an apparently inextricable tangle as far as the eye could reach. A man near informed me that the tail was a good three miles up stream. From beneath this wonderful *chevaux de frise* foamed the current of the river, irresistible to any force less mighty than the statics of such a mass.

A crew of forty or fifty men were at work. They clamped their peavies to the reluctant timbers, heaved, pushed, slid, and rolled them one by one into the current, where they were caught and borne away. They had been doing this for a week. As yet their efforts had made but slight impression on the bulk of the jam, but some time, with patience, they would reach the key-logs. Then the tangle would melt like sugar in the freshet, and these imperturbable workers would have to escape suddenly over the plunging logs to shore.

My eye ranged over the men, and finally rested on Dickey Darrell. He was standing on the slanting end of an upheaved log dominating the scene. His little triangular face with the accents of the quadrilateral eyebrows was pale with the blaze of his energy, and his chipmunk eyes seemed to flame with a dynamic vehemence that caused those on whom they fell to jump as though they had been touched with a hot poker. I had heard more of Dickey Darrell since my last visit, and was glad of the chance to observe Morrison & Daly's best "driver" at work.

The jam seemed on the very edge of breaking. After half an hour's strained expectation it seemed still on the very edge of breaking. So I sat down on a stump. Then for the first time

I noticed another acquaintance, handling his peavie near the very person of the rear boss.

"Hullo," said I to myself, "that's funny. I wonder if Jimmy Powers got even; and if so, why he is working so amicably and so near Roaring Dick."

At noon the men came ashore for dinner. I paid a quarter into the cook's private exchequer and so was fed. After the meal I approached my acquaintance of the year before.

"Hello, Powers," I greeted him, "I suppose you don't remember me?"

"Sure," he responded heartily. "Ain't you a little early this year?"

"No," I disclaimed, "this is a better sight than a birling match."

I offered him a cigar, which he immediately substituted for his corn-cob pipe. We sat at the root of a tree.

"It'll be a great sight when that jam pulls," said I.

"You bet," he replied, "but she's a teaser. Even old Tim Shearer would have a picnic to make out just where the key-logs are. We've started her three times, but she's plugged tight every trip. Likely to pull almost any time."

We discussed various topics. Finally I ventured:

"I see your old friend Darrell is rear boss."

"Yes," said Jimmy Powers, dryly.

"By the way, did you fellows ever square up on that birling match?"

"No," said Jimmy Powers; then after an instant, "Not yet."

I glanced at him to recognize the square set to the jaw that

had impressed me so formidably the year before. And again his face relaxed almost quizzically as he caught sight of mine.

"Bub," said he, getting to his feet, "those little marks are on my foot yet. And just you tie into one idea: Dickey Darrell's got it coming." His face darkened with swift anger. "God damn his soul!" he said, deliberately. It was no mere profanity. It was an imprecation, and in its very deliberation I glimpsed the flare of an undying hate.

About three o'clock that afternoon Jimmy's prediction was fulfilled. Without the slightest warning the jam "pulled." Usually certain premonitory *cracks*, certain sinkings down, groanings forward, grumblings, shruggings, and sullen, reluctant shiftings of the logs give opportunity for the men to assure their safety. This jam, after inexplicably hanging fire for a week, as inexplicably started like a sprinter almost into its full gait. The first few tiers toppled smash into the current, raising a waterspout like that made by a dynamite explosion; the mass behind plunged forward blindly, rising and falling as the integral logs were up-ended, turned over, thrust one side, or forced bodily into the air by the mighty power playing jack-straws with them.

The rivermen, though caught unaware, reached either bank. They held their peavies across their bodies as balancing-poles, and zig-zagged ashore with a calmness and lack of haste that were in reality only an indication of the keenness with which they fore-estimated each chance. Long experience with the ways of saw-logs brought them out. They knew the correlation of these many forces just as the expert billiard-player knows instinctively the various angles of incident and reflection between

his cue-ball and its mark. Consequently they avoided the centers of eruption, paused on the spots steadied for the moment, dodged moving logs, trod those not yet under way, and so arrived on solid ground. The jam itself started with every indication of meaning business, gained momentum for a hundred feet, and then plugged to a standstill. The "break" was abortive.

Now we all had leisure to notice two things. First, the movement had not been of the whole jam, as we had at first supposed, but only of a block or section of it twenty rods or so in extent. Thus between the part that had moved and the greater bulk that had not stirred lay a hundred feet of open water in which floated a number of loose logs. The second fact was, that Dickey Darrell had fallen into that open stretch of water and was in the act of swimming toward one of the floating logs. That much we were given time to appreciate thoroughly. Then the other section of the jam rumbled and began to break. Roaring Dick was caught between two gigantic millstones moving to crush him out of sight.

An active figure darted down the tail of the first section, out over the floating logs, seized Darrell by the coat-collar, and so burdened began desperately to scale the very face of the breaking jam.

Never was a more magnificent rescue. The logs were rolling, falling, diving against the laden man. He climbed as over a treadmill, a treadmill whose speed was constantly increasing. And when he finally gained the top, it was as the gap closed splintering beneath him and the man he had saved.

It is not in the woodsman to be demonstrative at any time,

but here was work demanding attention. Without a pause for breath or congratulation they turned to the necessity of the moment. The jam, the whole jam, was moving at last. Jimmy Powers ran ashore for his peavie. Roaring Dick, like a demon incarnate, threw himself into the work. Forty men attacked the jam in a dozen places, encouraging the movement, twisting aside the timbers that threatened to lock anew, directing pigmy-like the titanic forces into the channel of their efficiency. Roaring like wild cattle the logs swept by, at first slowly, then with the railroad rush of the curbed freshet. Men were everywhere, taking chances, like cowboys before the stampeded herd. And so, out of sight around the lower bend swept the front of the jam in a swirl of glory, the rivermen riding the great boom back of the creature they subdued, until at last, with the slackening current, the logs floated by free, cannoning with hollow sound one against the other. A half-dozen watchers, leaning statuesquely on the shafts of their peavies, watched the ordered ranks pass by.

One by one the spectators departed. At last only myself and the brown-faced young man remained. He sat on a stump, staring with sightless eyes into vacancy. I did not disturb his thoughts.

The sun dipped. A cool breeze of evening sucked up the river. Over near the cook-camp a big fire commenced to crackle by the drying frames. At dusk the rivermen straggled in from the down-river trail.

The brown-faced young man arose and went to meet them. I saw him return in close conversation with Jimmy Powers. Be-

fore they reached us he had turned away with a gesture of farewell.

Jimmy Powers stood looking after him long after his form had disappeared, and indeed even after the sound of his wheels had died toward town. As I approached, the riverman turned to me a face from which the reckless, contained self-reliance of the woods-worker had faded. It was wide-eyed with an almost awe-stricken wonder and adoration.

"Do you know who that is?" he asked me in a hushed voice, "That's Thorpe, Harry Thorpe. And do you know what he said to me just now, *me*? He told me he wanted me to work in Camp One next winter, Thorpe's One. And he told me I was the first man he ever hired straight into One."

His breath caught with something like a sob.

I had heard of the man and of his methods. I knew he had made it a practice of recruiting for his prize camp only from the employees of his other camps, that, as Jimmy said, he never "hired straight into One." I had heard, too, of his reputation among his own and other woodsmen. But this was the first time I had ever come into personal contact with his influence. It impressed me the more in that I had come to know Jimmy Powers and his kind.

"You deserve it, every bit," said I. "I'm not going to call you a hero, because that would make you tired. What you did this afternoon showed nerve. It was a brave act. But it was a better act because you rescued your enemy, because you forgot everything but your common humanity when danger —"

I broke off. Jimmy was again looking at me with his ironically quizzical grin.

"Bub," said he, "if you're going to hang any stars of Bethlehem on my Christmas tree, just call a halt right here. I didn't rescue that scalawag because I had any Christian sentiments, nary bit. I was just naturally savin' him for the birling match next Fourther July."

IN THE MAINE WOODS

ARTHUR GRAHAME *

THE drive! Pulp logs — four-foot lengths of spruce destined for the pulp crushers of the voracious paper mills down river. Saw logs — twenty-foot lengths of pine for the band saws of ever-hungry mills. Thousands and thousands of feet of rushing timber, wet and slick, sometimes tossed half hidden by sheets of white spray into the thin spring sunshine, sometimes tumbled end-over-end down breath-taking rapids by the fierce swirling waters of well-named Rapid River. Above all, appropriate music — the sullen roar of the river and the harsh crashing and splintering of timber hurled viciously against boulders and rock ledges.

Old Joe McIlroy, veteran of forty-odd years of river driving, my guide when I went into the logging country to report a drive for the readers of *Popular Science Monthly*, gripped my arm with a weather-darkened hand and pointed two hundred yards upstream to a long saw log, its butt jammed hard into some crevice in the river's rock bottom. It had swung across the current and lodged its other end behind a boulder. Held in place by the terrific rush of water, it had become a rallying point for other

* From *The Popular Science Monthly*, March, 1928. By permission.

logs, which hurled against it and up-ended, were transformed swiftly into a confused, spray-drenched pile of gigantic jack-straws.

"You've been wantin' to see a log jam," old Joe shouted in my ear. "Well, there's the beginnin' of a dandy. That there ledge is the worst spot in this whole six-mile stretch of white water that's been the devil's own delight ever since they began to drive down it. If the tender-out don't get on the job in a hurry and make the boys sweat blood, you'll see as bad a jam as there's ever been on this river — and there's been plenty. Want to see it closer to? Come on with you, then."

Sixty-odd years and rheumatism — the riverman's deadliest enemy — notwithstanding, he set off along the rough trail at a pace it taxed me to follow. The trail swung away from the river — but not out of earshot of its roar — into the warm stillness of the woods; then, after a hundred yards, back to the river. In the few minutes that we had lost sight of it, the jam had increased tenfold. It was an uneven, bulging wall of grinding, groaning logs extending across the narrow river. Water shot its way through the many crevices in this wall, but behind it more water, and thousands of logs, were piling up.

High on the bank above the jam, we broke into a small clearing in which stood a rough shack; a man emerged from the brush across the open space from us. He was a lean, slabsided man, whose long, solemn face the winds and suns of many seasons had tanned to the rich, even brown of a long-used saddle. He gave us a brief glance, then turned his clear gray eyes to the

jam. After a moment he spoke, with a Yankee drawl and in the gentle voice of the Maine woodsman.

"You can't trust this old devil of a river a minute," he observed without malice. "I just went upstream a piece to help the boys out with a little hang-up — and now look at this." He strode to a telephone on the side of the shack and spoke calmly into the transmitter.

"He's the tender-out," old Joe informed me. "It's his job to watch the river here and see that the logs are runnin' free. Old-timer on the river—all the tenders-out are. It's a right important job."

The tender-out took up his pickpole — a twelve-foot ash shaft with a steel tip fashioned auger-wise, so a man could thrust it into a log, give it a twist, and then pull the timber as he scrambled down the bank. Now the wall of logs was damming back most of the river's flow, and the water's roar was changed to a sullen murmur that mingled with the cracking and groaning of the logs beneath the terrific pressure. So little water flowed below the jam that the tender-out was able to leap from boulder to boulder into midstream. Then, facing the treacherous, trembling timber rising far above his head, soaked by the icy water that spurted spitefully from between the logs, he began to prod and pull with his pickpole at the tangled mass, searching for the jam's key log.

"I saw my brother killed that way," said old Joe. "That was twenty years ago, up north of here on the Swift Diamond. He found the key log all right, and loosened it — but he couldn't get clear in time. Little the logs and the rocks left of him. We

picked his body out of a shallow ten miles down. . . . Mighty close that I came to going the same way down there on the Androscoggin, right below Errol Dam. I was on top of a jam, shovin' logs over, when out she went with me. All hell broke loose. I saw nothin' but white water and grindin' logs — and then there I was standin' on a big saw log with my peavy in my hands and ridin' pretty in a quiet pool.

"Back in those days there was none better than me at ridin' the logs. Why, I mind once I rode one through an open sluiceway, just to show off to my best girl. There's few that knows the trick now. Drives ain't what they used to be, and lumberjacks ain't either."

I had been listening to old Joe with my eyes on the tender-out, playing his desperate game of jackstraws down there below the face of the jam, pushing and pulling until the sweat ran down his brown cheeks and the pickpole bent in his hands. Now, as he came leaping toward shore, there was a great to-do of shouting and singing in the brush, and a dozen lumberjacks strode into the clearing. Most of them were French-Canadians — husky young fellows, with dark faces and straight black hair and big-chested bodies — who wore gaudy mackinaw shirts, and carried pickpoles or peavies.

The tender-out came up the bank as they prepared to descend. "It's no good," he said to their foreman. "I'll have to blow her." From a box standing opened and handy at the door of his shack he took three yellow sticks of dynamite and a length of fuse, then went calmly back to the jam. Working unhurriedly and with method, he placed the "canned thunder" where it would do the

most good, bent over the fuse a moment, and came unexcitedly back to shore.

We took to shelter. It seemed a long time before anything happened. Then dull thunder shook the earth, and giant logs, rent and splintered, were hurled high into the air. Before they could splash down again the eager current had seized on the logs behind them and hurried them on downstream. In a few minutes, old Joe admitted unwillingly, the tender-out, with a few sticks of dynamite, had broken a jam that in "the good old days" would have resisted an entire driving crew for hours, and perhaps hung up the drive for days.

"They're using dynamite more every year," he grumbled. "It busts up a few logs, but it saves time, and time is worth more than logs these days, with lumberjacks paid higher than they used to."

River driving is a business, not a melodrama. It's a colorful and often an exciting business, but it's a business built on these three solid facts: Water will run downhill. Logs will float. With anything like decent water conditions, logs can be driven from the woods to the mills a lot cheaper than any railroad could carry them.

The business men at mahogany desks in steam-heated offices in Montreal and Portland and New York who pull the strings that send millions of logs rushing down northern rivers on the freshets of May and June do not think log driving is a declining business. Each year the woods crews must go deeper into the back country for their logs, so the tendency is toward longer drives and more efficient drives — drives that move faster and

leave fewer logs stranded. Each year many thousands of dollars are spent improving the rivers that carry their drives — blasting away troublesome boulders, and building heavy crib work to keep the logs running free in the channels.

But about these dollar-and-cents details the lumberjack refuses to fret his carefree soul. He toils and eats his beans with a mighty appetite, and when the drive is down spends his pay in the time-honored fashion of his kind.

Conditions vary with localities, but in New England and eastern Canada the cutting crews fell trees from September until spring.

When winter snow makes what old Joe calls “good slippin’ ” for sled runners, teams haul great loads of the logs to the frozen streams. Some are “landed” on the ice; more are piled in great “rollways” on the steep banks. When spring comes the break-up of the ice carries out the “landed” logs. Breaking out the rollways is a dangerous and spectacular performance that demands a clear head, quick wits, and agile body. Many a lumber-jack has died in an unexpected cascade of logs.

“I mind once,” said old Joe, “I was pokin’ away at the key log of a rollway and she wouldn’t budge. I got mad and hooked my peavy into that old log and pulled for all I was worth. Out she came and the whole kit and caboodle of logs came down on top of me. Get hurt? Not me! Not a one of them tetched me. While the boys were lookin’ for my remains down on the bank, I climbed up and hollered to them. Most surprised bunch ever I seen.”

Most interesting is the Androscoggin River drive that starts in

the Rangeley Lakes district of Maine and ends at the mills of Berlin, New Hampshire. It isn't long as drives go, but in its fifty odd miles it includes almost every variety of log driving.

The bulk of the logs handled on this drive are cut on the shores of Lower Richardson Lake, southernmost of the beautiful Rangeley chain of lakes. These logs are chained into great rafts and towed down the lake into Rapid River. Old Joe took me to see the logs sluiced through the dam into the river. The blue water of the lake was carpeted for the space of several city blocks with bobbing logs confined and controlled by long booms of logs chained end to end. Over this shifting floor lumber-jacks gay with bright checked shirts skipped nimbly, the calks — half-inch steel spikes — of their driving boots giving them momentary footholds. On the dam other lumberjacks, armed with pickpoles, waited.

Then the sluice-gate was raised, and the lake water, a good seven feet above its normal level, rushed through the narrow opening and leaped roaring twenty feet down to the rocky bed of Rapid River. On this water rode the vanguard of the drive — four-foot pulp logs that were carried down like match sticks, long saw logs that crashed on the rock-strewn river bed, up-ended rebelliously for a moment, then too were carried helplessly on by the unleashed water. On the dam the men with pickpoles worked like demons to keep the logs end-on to the current and running free, for a sluiceway jam is the meanest sort. As the boom began to empty a windlass was manned, with much shouting and singing, and the boom logs drawn in toward shore, thus herding the

outlying logs toward the sluiceway. Soon the desired number had passed through into the river, and the gate was lowered.

Following this section of the drive three miles down river, we found the logs floating quietly in deep water behind Middle Dam, and in charge of a new crew. There the sluicing process was repeated. Sometimes a single drive crew takes the logs from the woods to the mills, but on the Androscoggin drive, and on most other big ones, the dams divide the river into sections, each manned by its own crew, which hustles the logs to the next dam and then lets the other fellows do the worrying.

After six miles of the roughest sort of white water driving, Rapid River hurls the logs into Umbagog Lake and they are towed into the Androscoggin River. The logs are sluiced through several dams, and there is plenty of white water driving on the Androscoggin before they reach Berlin.

"I was at this drivin' game for forty years, until the rheumatism made me a has-been," volunteered old Joe as he spun the starter of the outboard motor and we started back across Umbagog. "It's a tough life, but it's hard to keep away from it. On the Androscoggin and the Diamonds I've driven logs — and on the big 'moccasin drive' up in the St. Maurice country in Quebec. They call it the moccasin because you never see a pair of calked boots on it. These Canadians up that way like to do their driving from canoes and them there bateaus of theirs — big flat-bottomed boats something like a dory, but with higher bows and sterns, that can go whoopin' through the darndest rapids you ever saw without takin' in a drop of water. Those fellers — there's a lot of Indian blood in most of 'em — are the best white

water boatmen you'll find anywhere. They can make a canoe sit up and talk.

"You been in that country? It's tough workin' there — dead cold in winter, and mosquitoes and black flies to drive you crazy in summer. Up there they don't call the forests the 'woods' or the 'brush.' They call 'em the 'bush.' Fellers say they're goin' into the bush just like a sailor says he's goin' to sea. And it's just as easy to get lost in the bush as it is to get lost at sea. I've heard a pack of wolves howlin' not ten miles from La Tuque, the biggest town there — the jumpin' off place for the bush. The same company that runs this drive here on the Androscoggin has a big pulp mill there, and owns timber limits up the St. Maurice.

"How do those companies know which logs belong to them? That's easy. A brand is cut in both ends of every log. Up above La Tuque the company I worked for has the first sorting gap on the river. A long boom stretches across the river, and in that boom there's left a narrow gap. There's a platform built there above water level, and men working on it work the log crosswise to the current, so the cleats on the endless chain of a power conveyor pick them up. On a higher platform sorters look at the brands. Logs that have their company's brand they push off into the water, where they are held by booms until the pulp-crushers of the La Tuque mill need them. The conveyor throws the other logs back into the river below the booms, and they float on downstream.

THE SAILOR

(DEEP-WATER MAN)

FELIX REISENBERG *

I

THE SQUARE RIGGERS

AMERICA is again facing forward to the sea. The ancient thrill of the wide salt spaces, of the broad horizon beyond which adventure beckons us, appeals once more to the youth of America. We are living in times when the great importance of the sea as a career comes home to us at every turn. The sea is the great bulwark of our security. We ride, an immense treasure-laden galleon, between the mightiest oceans of the world, safe only so long as our young men do not fear the sea — our last frontier.

When America returns to her own, she builds upon foundations of tradition that have their footings on the solid bed rock of the republic. One glorious era of our sea history was followed by another, and as times progressed the breed of seaman ever rose capable and triumphant to the necessities that called them forth.

* From *Under Sail*. Harcourt, Brace & Co. 1924. Permission of the author.

The Revolutionary sailors, and those of 1812, were followed by the great commercial seamen of the clippers. The mighty fleets of the Civil War astonished the world, and in the period just previous to our seafaring decline of a score of years past, the great sailers flying the Stars and Stripes spread their white cotton canvas on every sea.

Their story has never been adequately told. They are not to be measured in terms of tonnage, or in the annals of swift passages from port to port. Their contribution to the legends of the sea remains obscure. They carried a tradition of hard driving, and were a phase of our sea life that formed and forged the link between the old and the new, between the last days of sail and the great new present of the America of steam and steel.

Men who go to sea today in our merchant marine, in positions of command, are, in many instances, graduates of the ships of these latter days of sail.

Looking back, and as time goes it is not so very far away, we can, in our mind's eye, see the great wood-built craft that lined the waterfront of South Street. These were the last of the American sailing ships, entering from, and clearing to, every sea port under heaven. They were not the famous California clippers of an earlier day, or the swift Western Ocean packet ships, or the storied tea ships of the China trade, but they were their legitimate successors. The ships of this last glorious burst of sail, under the Stars and Stripes, were larger craft, vessels built for the long voyage haul, for the grain trade, for the sugar trade, and as carriers of general cargo to the Orient and the western coast of North America.

Most of these ships were laid down in the eighties, and left the yards of Maine to find adventure and preferment in the longer routes of commerce. The Horn and the Cape of Good Hope were their turning points, and they smoked through the hum of the Roaring Forties, as they beat from the Line to Liverpool, laden with California grain, or they ran before the westerly winds, from Table Bay to Melbourne — *Running Their Easting Down* — black hulled, white winged ships, with New York, Boston, Baltimore, or Philadelphia standing out in golden letters on their transoms.

Only the strongest and best found ships, and the most skilful and daring seamen were fit to carry the flag across the world-long ocean courses about the storm-swept Horn, and here again America more than held her own in competition with the mariners of the old seafaring nations of Europe.

Winthrop Lippitt Marvin in his valuable work, "The American Merchant Marine," * pictures this last Titanic struggle of the sea in stirring fashion—

"It was a contest of truly Olympian dignity, — of the best ships of many flags with each other and with the elements. Out through the Golden Gate there rode every year in the later seventies and the eighties, southward bound, the long lean iron models of Liverpool and Glasgow, the broader waisted, wooden New Englanders, with their fine Yankee sheer and tall, gleaming sky-sails, the sturdy, careful Norwegian and German ships, often launched on the Penobscot or Kennebec, and here and there a graceful Frenchman or Italian. The British were the most numer-

* Chas. Scribner & Sons, N. Y.

ous because the total tonnage of their merchant marine was by far the greatest. Next came the Americans. The other flags looked small by comparison. In this splendid grain trade there sailed from San Francisco for Europe in 1881-85, 761 British iron ships and 418 American wooden ships. The Americans were the largest vessels. Their average registered tonnage was 1,634 and of the fourteen ships above 2,000 tons that sailed in 1880-1, twelve flew the Stars and Stripes. The average tonnage of the British iron ships was 1,356.

“The wooden yards of Maine had seen their opportunity and built in quick succession many great ships and barks of from 1,400 to 2,400 tons, very strongly constructed on models happily combining carrying capacity with speed, loftily sparred, and clothed with the symmetrical, snow-white canvas for which Yankee sail-makers were famous the world around. These new vessels were not strictly clippers, though they were often called so. They were really medium clippers; that is, they were less racer-like and more capacious than the celebrated greyhounds of the decade before the Civil War. They could not compete with steam; their owners knew it. But they were launched in confident hope that they were adapted for the grain trade and for some other forms of long-voyage, bulky carrying, and that they could find a profitable occupation during their lifetime of fifteen or twenty years. They were just as fine ships in their way as the extreme clippers, and in all but speed they were more efficient. They were framed with oak, and ceiled and planked with the hard pine of the South. They were generously supplied with the new, approved devices in rig and equipment.”

In the last years of the nineties there were many survivors of this noble fleet of American sailers still in the long voyage trade. Ships like the *El Capitan*, the *Charmer*, the *A. J. Fuller*, the *Roanoke*, and the *Shenandoah*, were clearing from New York for deepwater ports, and South Street was a thoroughfare of sailors, redolent of tar, and familiar with the wide gossip of the seas, brought to the string pieces of the street by men from the great sailing ships.

Then the crimp still throve in his repulsive power, and the Boarding Masters' Association owned the right to parcel out, fleece and ship, the deepwater seamen of the port. The Front Street House and a score of others held the humble dunnage of the fo'c'sle sailor as security, *cash*ed his "advance" and sent him out past the Hook with nothing but a sparse kit of dog's wool and oakum slops, a sheath knife and a donkey's breakfast.

Those were the hard days of *large* ships and *small* crews. In clipper days, a flyer like the *Sovereign of the Seas* carried a crew of *eighty* seamen, and most of them were as rated—A.B. The ship *A. J. Fuller*, in the year 1897, left the port of New York, for the voyage around Cape Horn to Honolulu with *eighteen* seamen, counting the boy and the carpenter, the *Fuller* being a three skysail yard ship of 1,848 tons register.

It may be interesting to compare the size and crew of the *Sovereign of the Seas*, as given by Captain Clark in his great book, "The Clipper Ship Era," * with the dimensions and crew of the ship *A. J. Fuller*.

* G. P. Putnam and Sons.

<i>Ship</i>		Sovereign of the Seas		A. J. Fuller	
Length	258	ft.	229	ft.	
Beam	44	ft.	41.5	ft.	
Draft	23.5	ft.	18	ft.	
Register Tonnage	2,421	tons	1,848	tons	
Crew—					
Master	1		Master	1	
Mates	4		Mates	2	
Boatswains	2		Carpenter	1	
Carpenters	2		Able Seamen	16	
Sailmakers	2		Boy	1	
Able Seamen	80				
Boys	10				21

This condition, of small crews and large ships, brought to the seven seas a reputation for relentless driving and manhandling that has clung to the minds of men as nothing else. The huge American ships were the hardest afloat, and that remarkable booklet, "The Red Record," compiled by the National Seamen's Union of America, in the middle nineties, carries a tale of cruelty and abuse on the high seas that must forever remain a blot upon the white escutcheon of sail.

These ships bred a sea officer peculiar to the time—the bucko mate of fact as well as fiction. These were hard fisted men, good sailors and excellent disciplinarians, though they lacked the polish acquired by sea officers of an earlier day when the sailor

was often a passenger carrier, and intercourse with people of culture had its effect upon the men of the after guard. Also, the sea had become less attractive as a career. The boasted "high pay" of the American Merchant Marine, was \$60 per month for the Chief Mate; \$30 per month for the Second Mate, and \$18 per month for an A.B.—at least such were the magnificent wages paid on the *A. J. Fuller* of New York in the year 1897.

The mate, to earn his two dollars a day, and keep, had to be a seaman of the highest attainments. His was a knowledge won only after a long hard apprenticeship at sea. He had to have the force of character of a top-notch executive, combined with ability and initiative. Then too, he was supposed to be a navigator, a man having at least a speaking acquaintance with nautical astronomy. In addition to this he might be as rough and as foul mouthed as he saw fit, and some of them were very liberal in this respect.

Then men still signed articles, voyage after voyage, for the long drill around the Horn, or, to vary the monotony, if such it could be called, made the voyage to Australia, or to China or Japan. In the main, however, American ships clearing from New York carried cargoes to the West Coast of the United States, or to the Hawaiian Islands, where they came under the protective ruling of the coastwise shipping laws, and were not compelled to meet the stringent insurance rates of Lloyd's that barred American sailing bottoms from fair competition with the British.

The sailor men of that day were still real seamen, at least a large number of real seamen still clung to the remaining ships.

They were experts, able to turn in a dead eye in wire or hemp, and could cast a lanyard knot in the stiff four-stranded stuff that was later on replaced by screws and turn buckles when metal hulls succeeded those of wood.

With the passing of the wooden ship—the wooden square rigged sailer—went the American sailor, for comparatively few steel sailing ships were built in the United States. With the sailor went the romance of bulging canvas and of storm stripped humming bolt ropes. The tragedy, and the hardships of the long voyages passed away, and with that passing is gone much of the actual physical struggle with the wind and sea that made the sailor what he was.

The square rigged breed of sailors, while not dead yet, for the old salts die hard, has, by force of circumstances, failed to rear a younger generation to take its place. But the old spirit of sea adventure is as strong as ever; the ocean rages as loud, and lies as calm, as in the days of departed glory. It is still the world route to foreign trade, and a more ample domestic prosperity. Americans are again turning toward the sea, are heeding its age old wisdom, and are building and handling the newer craft of steam, and coal, and oil, with as much skill and success as they did the sailing craft of old.

On the following pages is recorded for the seamen and landsmen of today, a personal story of one of the last voyages around Cape Horn in a wooden ship propelled by sail alone—a ship without a donkey engine, a wooden Bath-built packet at her prime in point of age and upkeep. The advance notes have been cashed by the boarding masters, who have left the crew in tow

of their crimps, and, after deducting for board and slops, the last remaining dollars have been blown in on the Bowery under the watchful eyes of the runners, who see to it that the men are delivered on board.

Our ship is the *A. J. Fuller* of New York, Captain Charles M. Nichols, and she waits her crew, ready to cast off from her berth in the East River at the turn of the tide, at daybreak on December 5, 1897, having cleared for the port of Honolulu, capital of the Republic of Hawaii, with a general cargo consigned to the old island house of Brewer and Company.

II

OUTWARD BOUND

"Oh, for a fair and gentle wind,"
I heard a fair one cry;
But give to me the roaring breeze,
And white waves beating high;
And white waves beating high, my boys,
The good ship tight and free,
The world of waters is our own,
And merry men are we.

Jacob Faithful.

"COOK!" bawled a deep voice from a door that burst open with a flood of yellow light under the break of the poop, "serve a round of hot *cafay nore* to them passengers! And Mr. Stoddard," added the mate from whom these orders issued, addressing the second officer who strode from the edge of light toward the group of men tumbling on board, "turn all hands to in five minutes! Stand by to cast off lines!"

Some of the shore crowd from the boarding houses helped to pass up the chests and bags of dunnage, and the bundles of "donkey's breakfast" as we clambered to the ice-encrusted deck of the ship *A. J. Fuller*, lying at her wharf near the foot of Maiden Lane. A flickering light, and the rattle of stove lids in the galley, as we passed forward to the fo'c'sle, told us that the cook was stirring, and the snorting of a tug under the starboard quarter gave notice of an early start.

It was dark when we came aboard; a cold December wind rippled the black waters of the East River, chilling to the marrow those few stragglers who walked the cobble stones of South Street at that early morning hour.

An odd lot of humanity dumped their few belongings on the fo'c'sle deck; strangers all, excepting a few who had just deserted from the British bark *Falls of Ettrick*, men jumbled together by strange fate, and destined to long months of close companionship, of hard knocks, and endless days and nights of unremitting labor.

No time was lost, however, in sentimental mooning; the chill morning air was charged with activity, the "after guard" was all astir and an ebb tide flowed, ready to help us on our way. Gulping down the "cafay nore" that presently was passed forward in a bucket, all hands dipping in with hook pots and pannikins, hastily dug from chest and bag, we were barely able to stow away this refreshment before a heavy fist thumped the fo'c'sle doors.

"Turn to! Turn to! This ain't a private yachting tour!" was the sarcastic invitation that sent us scrambling to the deck.

"Here! You, I mean!" yelled the mate, "come forward!" for I had headed aft, and, at this command, I found myself with some others hauling a heavy water-soaked hawser aboard the fo'c'sle head.

"All clear?" came the query from aft.

"Aye, aye! All clear!"

A long whistle sounded from our tug, as we backed slowly from the wharf; the escort of boarding house runners shivering

on the string piece of the dock, gave us a dismal cheer, and the voyage around Cape Horn had fairly begun.

The first level rays of morning light began to filter over the house tops on the Brooklyn side, the misty span of the bridge loomed above the river, and a dozen bloodshot eyes among the crew forward cast their farewell glances at the Tom and Jerry signs in the saloon windows on historic South Street.

We were a lumbering lot, pushed and cuffed from station to station, our best men acting like dolts, until the exercise and crisp morning air, zipping above the river, wore off the effects of a last night spent at the Atlantic Garden. South Street, at that day still a forest of spars, with here and there a bald spot marking the advent of the coastwise steamers, slid past us, Governor's Island, the Statue, the Narrows, and the Hook, were passed unnoticed in the ceaseless hustle on our decks. The running gear, left by the shore riggers in a hopeless tangle, had to be put to rights, and the mates worked us like demons to get things in some sort of shape before we should be called upon to work the vessel under sail.

Gradually order of some sort issued from the chaos, and as the day wore on we set our fores'l, all tops'ls, main t'gan'sl, jib and stays'ls, before a stiff off-shore breeze that caused the tow-line to slacken, and orders were given to cast off the tug.

The new steam pilot boat *New York* rode the swell ahead of us, ready to take off the pilot.

"Weather main braces!" came the order; the yards were braced aback, a yawl from the *New York* touched our side for an instant, as we surged ahead slowly against the back push

from the main, and the pilot, hanging from a Jacob's ladder, dropped into his boat.

"See you in Liverpool!" shouted the pilot, standing in the yawl and waving a final farewell to Captain Nichols.

"Brace up main yards, sir!" ordered the skipper, addressing the mate, and we swung them around with a will.

The day was well advanced by then, a low bank of cloud over the land shut in the sunset, and a spanking breeze from no'east by nor' brought our port tacks to the deck. The *Fuller* heeled easily beneath the force of the wind. Off to leeward, and rapidly falling astern, was the American ship *Tam O'Shanter*, bound for China; we heard afterward that she was lost.

Up to the first dog watch all hands had labored without a moment's rest, and at eight bells in the afternoon the courses and all plain sail to royals were drawing nicely. As soon as the gear was shipshape and coiled on the pins, all hands were mustered aft. There was a feeling of uncertainty among the crew as we filed aft to the waist, standing in an awkward group about the main fife rail, a nondescript, hard-fisted, weatherbeaten lot of men.

Above towered the vast expanse of snowy canvas, looming out of all proportion in the dark half light of the winter evening; beneath us was the rolling, palpitating sweep of deck, yielding and swaying in the constant balance 'tween the wind and sea. To windward, above the line of bulwark, a ragged mackerel sky drove across the cloud rack of scattered cirrus, touched with dull red from the high shafts of the setting sun. The black backs

of the shoreward rollers swept to leeward and astern, passing us as if frightened by the lofty figure of the ship.

The watches were about to be chosen. The two mates came down into the waist, and Captain Nichols stood at the break of the poop to observe this time-honored ceremony of the sea. For better or for worse, in sunshine or in storm, we were to be parceled off to our respective task-masters for the long months of the voyage ahead. The fate of friendships was to be decided, for watch-mates are far closer than mere shipmates, and a general desire to escape the clutches of the mate made all of us anxious for the ordeal to be concluded. Most of the men were in favor of the second mate, Mr. Stoddard. The mate, Mr. Zerk, was a driver, a bully, and what not, but the second mate seemed to be easier, in spite of the fact that he lost no opportunity to bawl out everyone that came across his path.

"He'll be all right when we get outside," was the remark that voiced the general opinion. Old Smith, perhaps the wisest of the real sailormen on board, came as near to hitting the relative values of the mates as was possible. "I don't see no choice between them," he said. "One may be easier, but give me the best sailor. A good sailor aft saves work for his watch forward. See if I don't figger it right. Take it any way you like, there's no choosing between them rotten apples aft, and let it go at that."

Mr. Zerk, a man of about forty, medium in height, broad shouldered, bull necked, with close cropped yellow hair — grey eyes set in a very red, smooth-shaven face, except for a sweeping blond mustache, was a native of Nova Scotia, brought up in "blue nose" ships. He eyed us with the cold look of a surgeon

about to amputate. Walking up to the group just abaft of the mainmast, he made his first choice without a moment's hesitation.

"Frenchy, come here," and Victor Mathes, of Dunkirk, went to the port watch, chosen by the mate.

"Smith," was the laconic reply of Mr. Stoddard to the first choice of the mate. Honors were even, for it was a toss up between the two men.

Brenden, a husky, well-set-up sailor, trained in the sailing ships out of Hamburg, with plenty of beef and a good head, was the next choice of the mate.

"Axel," said the second mate, scoring the first advantage in the choosing of the watches. Axel proved to be one of the best men in the crew, a big, boyish Swede, a sailor and a gentleman.

"Roth, come here," and John Roth, late of the opal mines in Australia, one of the deserters from the *Falls of Ettrick*, and the artist of the crew, went to port. We soon dubbed him "Australia." The mate sent "Australia" to relieve the wheel, and the second mate paused a moment weighing the merits of the remaining men.

"Tom," was his choice, and another sailor, Tom Morstad, also a deserter from the *Ettrick*, went to starboard.

Things were fining down, and the remaining victims in this heartless process of elimination were becoming increasingly apprehensive, while those who had been chosen grinned at us with aggravating humor. The mates were getting less and less sure of their choice as the pickings became more and more undesirable. It was getting to be a question of brains versus brawn. Husky young clodhoppers shipped as A.B. by the greedy boarding mas-

ters; young mules with nothing but their thick hides and an abundance of main strength and stupidity to recommend them, placed in the balance with such old fellows as Jimmy Marshall and Jack Hitchen. Jimmy, who claimed to be sixty-five, a wizened little old sea-horse, but a wonderful "chantey man," won the next choice and was taken by the mate.

Hitchen was called to starboard, and the honors still remained about even in the contest of wit and experience, for both mates had studied the paces of each individual with critical eyes during that eventful day.

The next choice was a painful one. There was a short pause; it seemed to us that "Charlie Horse," who had once been mate on a coaster in the oyster trade, or Dago Tony, would surely be chosen next.

"Felix, come here," said the mate, running his eye over the Dago and Charlie, and lighting on me. I stepped over to the boys lined up on the lee side, a weight lifted from my mind, as Frenchy, destined to be my chum, moved near me.

It was getting on by then. Chips went aft carrying the side lights, and Captain Nichols was stumping the poop with some impatience, as a hint to his officers to bring things to a close.

The second mate chose Charlie, and George Krug, or "Scouse" as we called him, was taken by the mate. Dago Tony went to the second mate, and Fred Erricson, a good sailor, also an *Ettrick* deserter, went to port.

Mike, the wood turner, went to starboard, and Joe Johnson, one time a cobbler's apprentice, and general all round husky favorite of misfortune, was taken by the mate.



The Sailor

The left-overs, Martin, and Peter the boy, were divided by the call of Peter to the starboard watch, and Martin fell to the mate. Peter, an American, ex-reporter on a Worcester paper, one time foreman in a corset factory, and a bright, wideawake boy of something over twenty-one, had shipped for eight dollars a month *and his health*. The voyage netted him his payday many times over, for he was endowed with brains and, starting out a wreck, he came back a tough-handed deep-water man.

It was close to six bells by that time. Chips had set out the running lights and was getting the big pump ready, having sounded the well and reported a foot of water.

"Starboard watch below for tucker!" ordered the mate; and then turning to the men of his watch, he ordered, "Man the pump!"

It was dark as we bent to the cranks of the big pump, and with the hum of wind and the swish of water in our ears we realized that we were truly at sea, insignificant mortals riding on the low deck of a vast fabric of wood and canvas, venturing far from land on the mighty stretches of the Western Ocean.

That first night at the pump, forerunner of many, many other nights, our little band of watch mates toiled in silence, except for a few monosyllables. Four men to each crank, two on a side, facing each other, our tired arms and backs reciprocated to the action of rotation like so many toy figures actuated by some hidden clockwork; the new labor was almost a rest after the constant pulling and hauling of the day. Finally the low, raucous wheezing of the valves told us we were sucking air, and the mate, from the darkness of the poop, called out, "Belay pump!"

It is the custom of the sea, handed down from time immemorial, that "The captain takes her out and the mate brings her back." That is, the first regular watch at sea is taken by the captain's watch on the outward passage, and the same watch is taken by the port, or mate's watch, on the start for home. Of course the second mate stands the starboard watch, except in case of emergency.

Accordingly, at four bells, we went below, and after a hasty supper we sought our bunks for a brief rest before turning out for the watch from eight to midnight. We were tired — some of us, to the point of utter exhaustion — and a few of the older men claimed that we were being cheated out of our right to the first four-hour watch below, ours having merely been a dog watch of 2 hours from 6 to 8. Anyhow, whatever we thought about that, nothing was said above a mild growling in the fo'c'sle, and as we tumbled out at eight bells, and both watches lined up in the waist to muster, the chill wind cut through us, and a moment later we were greeted by an order from aft.

"Hands aloft to overhaul the t'gallant and royal buntlines!"

Up I went on the mizzen, never caring to lag behind on an order to lay aloft, a piece of twine in my pocket. The gear was overhauled and stopped just below the blocks, so the buntlines would not chafe the sails, and at the same time the stops of cotton twine were frail enough to be easily broken. When at times they were not, some unlucky wight would clamber aloft at the critical moment of taking in sail amid the slatting of canvas and the most profuse showers of artistic abuse.

Coming down from this task, I was in time to witness a burst

of profanity on the part of the mate. "Keep moving, you beach-combing — — — ! Every lousy — — — — ! I won't have no 'lime juice' sleeping on deck this voyage. D'ye hear that?" All heard, for there was a shuffle of weary feet about the main hatch, where several of the watch had perched comfortably in the dark, and, after a moment of indecision, sprinkled with derogatory mutterings, we paired off in little groups of twos, walking the swaying deck wherever we could find places free from the back draft of the sails.

Frenchy was my first chum on the *Fuller*, and though for periods we drifted apart, through sheer mutual exhaustion of our interchangeable ideas, yet we always came together again. Somehow, on the very start of the voyage, when the crimps and runners bade us that sad farewell from the port of New York, we were drawn together. The night that we paired off, on our first watch at sea, it seemed natural that Frenchy and I should elect to stump the deck in company. We preempted a path from the lee main pin rail to the after end of the forward house. "It's better here than anywhere," remarked Frenchy, and I soon found he was right, as we missed the draft from the mains'l and were partly sheltered by the house on the forward leg of our walk.

Frenchy was a heavy-whiskered, ruddy specimen, sporting the square-cut beard of the French sailor. He was an ex-naval man, and one time prison guard in the penal settlement of New Caledonia. Trained to the sea since boyhood, in the fishing fleet of Dunkirk, for many years a rigger in the naval yards at Brest, a sailor man on every type of craft from the Mediterranean

ybeck to a ship. Victor Mathes was one of the finest types of the Gallic seaman.

His life was a vague and many folded nebula of romance. He was full of stories of the life in New Caledonia, of the discipline on the outlying islands, of punitive expeditions, and of the intrigues and jealousies among the checkered lives that wear themselves away in those distant places.

Night after night we paced the deck during the long, cold watches, and between the calls to man this rope or that, and the horsing and rustling about that was always indulged in, we swapped information of all kinds, related all sorts of experiences, truthful and otherwise, and each man explored his mental storehouse for the amusement and benefit of his chum. For hours at a time Frenchy would talk of good things to eat; this was a hobby, in fact a sort of passion, with him and often drove me to the verge of distraction. He would go into the minutest detail of how his sister Madeleine, back in Dunkirk, prepared some particular dish, telling not only of the delightful flavor and succulent qualities, but he would go into the subject of the way things smelled, roast fowl, with all sorts of fancy stuffing. My mouth would water at these cruel recitals and I know that Frenchy suffered as much as I did at the poignant recollections of gastronomic joys long past.

III

CAPE HORN

On a clear Monday morning, the seventh of February, 1898, to be exact, the captain, after working up his A. M. sight, came on deck and announced a good observation. It was the first time the sun had been visible in some days, and by working a Sumner he found we were on a line cutting close past Cape St. John, on Staten Land, having sailed the ship down between the Falkland Islands and Cape Virgins by dead reckoning. We were coiling down the gear after the morning washdown, and I was busy at the monkey rail when he came on deck with his results, and imparted the above information to the mate in my hearing.

"Better send a hand to the main skys'l yard, Mr. Zerk," said the captain, in conclusion.

I was handy, and at a nod from the mate sprang up the Jacob's ladder and onto the ratlines, going up like a monkey, out over the futtock shrouds, up the topmast rigging, narrowing to the topmast crosstrees, in through the horns of the crosstrees, and on farther up the t'gallant and royal rigging, on the slight rope ladders abaft the mast. Coming to the skysail mast, hardly larger 'round than the stick of a fair catboat, I shinnied up with the help of the halyards, and swung myself astride of the yard,

my arm about the aerie pinnacle of the main truck. From my vantage point the sea was truly an inspiring sight; clear as crystal, the limpid air stretched free to the distant horizon without a mist or cloud to mar the panorama of vast blue ocean. I felt as though I had suddenly been elevated to a heaven far above the strife and trouble of the decks below.

For the moment I forgot the object of my climb in the contemplation of the sparkling scene stretching as far as eye could reach. I glanced down to the narrow deck far beneath, white in the sun, the black top of the bulwarks outlining the plan of the ship against the deep blue waters; my eye followed the easy curves of the squared canvas on the main, the great breadth of the yards extending to port and starboard, and I wondered that so small a ship could support such an avalanche of sail as bowed along under my feet. Aft, a foamy wake stretched for a mile or two, for we were sailing at a fairish speed with the wind from the north, a point on the port quarter.

I saw the men flaking down the fore tops'l halyards, clear for running, on the top of the forward house, and I saw the mate watching me from the weather fore pinrail, his head thrown back as he gazed aloft; something told me to get busy, and I looked far ahead to the south.

A faint blue streak on the horizon held my eyes. Accustomed to the sight of land from out at sea, through my voyages in the schoolship; still I hesitated to name it land. We were sixty-two days out, and land looked strange. Again I brought my sight to bear upon the distant skyline ahead; there was no mistaking

the dim outline of land rising from the sea at a point immediately to the south of us and reaching westward.

"*Land ho!*" I hailed the deck.

"Where away?" came the voice of Captain Nichols.

"A point on the lee bow, sir!"

"All right! Lay down!" shouted the mate, evidently not intending that I should further enjoy my lofty perch on the skysail yard.

We raised the land rapidly, the breeze increasing slightly as the day advanced. At noon Staten Land was visible from the deck, and by eight bells in the afternoon watch we were sailing past the bold shores, some ten miles distant, and drawing the land well abeam. Running south for a good offing, and taking in our light sails with the coming of darkness, we hauled our wind to the starboard quarter at the end of the last dog watch and headed bravely for old "Cape Stiff."

Captain Nichols might have ventured through the Strait of Le Maire, with the weather we were having, though at the best it is taking chances to keep the land too close aboard when in the troubled latitudes of Terra del Fuego. Countless ships, with the fine *Duchesse de Berry* among the last of them, have ground their ribs against the pitiless rocks that gird those coasts. However, we were enjoying the rarest Cape Horn weather — sunshine, fair wind, and a moderate sea.

For the first time in many weary days we livened things up with a chantey as we swigged away on the braces and tautened every stitch of canvas with well stretched sheets and halyards.

When we pumped her out that night at the main pump, for

the ship was almost on an even keel, we noted the skipper had begun to stump the quarter deck in a very excited way, constantly ducking up and down the companion, and scanning the horizon with an anxious eye. Cape pigeons were circling close to the ship with an endless chatter, and far above us swung a huge, dun-colored fulmar gull, its white belly clean against the grey sky.

"There is something doing with the glass," remarked Frenchy, eyeing the skipper. "We'll have some weather to look out for before long," and all of us watched the gull with fascinated eyes. Jimmy and Brenden agreed with Frenchy that we were in for heavy weather.

But in spite of these dire predictions, and in spite of a "red dawn," the day broke and continued fair, and we were again regaled with a glimpse of land, jagged somber peaks, jutting into the sky to the north like the cruel teeth of a ragged saw, grey blue above the far horizon.

I was aft flaking down the mizzen tops'l halyards on the morning following the landfall when Captain Nichols stumped past me from the break of the poop to the companion. He had been up all night, and the continuation of fine weather evidently pleased and surprised him. He had a pair of binoculars in his hand, and, in passing, he stopped and offered the glasses to me, pointing to the southernmost promontory, a cold blue knob rising from the sea.

"That's Cape Horn over there, Felix. Take a good look at it. You may never see it again, if you were born lucky."

Almost staggered by this sudden good fortune, I brought the

captain's glasses in focus on the dreaded cape, my whole being thrilled with the pleasure of looking through those excellent binoculars at that distant point of rock, the outpost of the New World, jutting far into the southern ocean. I doubt if the gallant old Dutchman, Schouten, who first "doubled" it, experienced half the exhilaration that I did on first beholding that storied headland. At four bells in the morning watch I went to the wheel, and while the watch swabbed down the decks after the morning washdown, I was privileged to look at the Cape out of the corner of my eye, between times keeping the "lubber's line" of the compass bowl on sou'west by sou', for the skipper had shaped a course a point or so further off shore, as the currents had evidently set us in toward the land during the night and he wished to keep his safe offing.

The wind in the meantime had veered round to west-nor'-west, blowing directly off the land and with increasing force. The light sails were taken in again, and by eight bells we were under t'gans'ls, upper and lower tops'ls, reefed fores'l, reefed mains'l, spanker, jib and topmast stays'ls.

As I left the wheel and went forward, I determined to attempt a pencil sketch of Cape Horn, the weather being too dull for a photograph, even if the land were not too distant. The result, after some trials, and the loss of my breakfast, which was nothing, resulted in a fair representation of what we saw of the Cape, and I turned into my bunk with a feeling of satisfaction. After all, it was worth a good deal to have actually set eyes upon the Horn.

When we turned out at one bell, for dinner, we found the

wind had veered farther to the west, we were sailing by the wind with the starboard tacks aboard, the cold spray from a rising sea, breaking over the fo'c'sle head, and spattering against the fo'c'sle door.

Jimmy sat up and rubbed his eyes as the watch was called and swore gently under his breath. Brenden went out on deck to take a look at the weather. "Hell, we got it now. I have seen this before. D'you feel the ice?" he asked.

Indeed we all felt the drop in temperature, and the short snappy jerk of the ship, as she met the new direction of the sea, was anything but pleasant.

Coffee was served out to us that noon instead of lime juice, and the warmth was welcome; it helped wash down the last cooked meal that Chow was able to prepare for ten days.

Mustering on deck at eight bells, we found we were driving south under a leaden sky. Cape Horn, still dimly visible, was soon shut off, vanishing in a cloud cap over the land astern. We were sailing due south, the wind having headed us, and at four bells, the wind rapidly increasing in violence, the starboard watch turned out to help in shortening down. We at once took in the t'gans'ls, mains'l, and jib, and these were followed in quick succession by other canvas until at eight bells we had the *Fuller* stripped to her lower tops'ls, close reefed main upper tops'l, and storm stays'ls. The sea rose to mammoth proportions, fetching as it did from the very edge of the Antarctic ice barrier.

The canvas aloft soon became stiff with ice and all gear on the ship was coated with frozen rain, as we were swept by a succession of rain and hail storms. At nightfall we were hove to, on

the starboard tack under goose winged main lower tops'l, reefed main trys'l, and storm stays'l. The oil tank forward was dripping its contents on the sea, and two oil bags were slung from the fore and main weather channels.

The storm, for the wind had now increased to fully sixty miles an hour, held steady from the west until midnight. Then it suddenly went to nor'west, and in the squalls, when the wind rose to hurricane force, the *Fuller* lay over on her beam ends. A vicious cross sea added its danger to the situation. All hands were then on deck, remaining aft near the mizzen rigging. The fo'c'sle, galley, and forward cabin were awash. Four men braced themselves at the spokes of the wheel, under the eye of the second mate, and relieving tackles were hooked to ease the "kick" of the tiller. Preventer braces and rolling tackles, got up earlier in the day, were hove taut to steady the heavy spars aloft. All loose gear was streaming to leeward, washing in the sea, through the open scuppers and freeing ports. A fierce boiling of white phosphorescent wave caps lit the sea as it broke over the ship, intensifying the black pandemonium overhead. The sleet-laden spume shot over the prostrate vessel in a continuous roar, drowning all attempts at shouting of orders.

It was during the wild but fascinating hours of this night that I realized the high quality of seamanship that had prepared us for an ordeal such as we were going through. The consummate skill with which the great wooden craft was being handled came home to me with a force that could not be denied. How easily a bungling lubber might have omitted some precaution, or

carried sail improperly, or have done, or not done, the thousand things that would have spelled disaster!

The captain and mate stood at the lee of the mizzen mast, each with a turn of the tops'l sheets about him, and hitched over the monkey rail. The rest of us, crouching at the lee of the cabin trunk, knee deep in the water when she went over in the heavier squalls, held our places wondering what turn things would take next. Looking through one of the after cabin ports, on my way to the wheel, I saw Chow and Komoto, the cabin boy, packing a box by the light of the small lamp swinging in its gimbals. They were evidently getting ready to leave — where to — themselves and their gods alone knew.

All things have an end, and the Stygian blackness of the night gave way to gray streaks of dawn that broke upon us, revealing a scene of utmost desolation. A note of order was given to the wild confusion of the gale-wracked fabric, when Chips, his lanky figure skimming along the life line, and his sounding rod sheltered under his long oil coat, ventured to the main fife rail to sound the well. As for the crew, we were soaked with salt water and frozen to the marrow. The main lower tops'l had blown from the bolt ropes during the night; we never missed it until morning. Twenty feet of the lee bulwark — the port side — was gone, and a flapping rag of canvas at the main hatch told us that the tarpaulin was torn. Looking forward through the whistle of wind and spume that cut across the sharply tilted rigging, the scene was one of terrific strife, as though some demon ruler of the sea had massed his forces, and was making a desperate drive for

the destruction of the wooden handiwork of man upon which he dared to venture over those forbidden wastes.

No matter how miserable one may be, action of some kind always comes as a relief. Our hard lot on the *Fuller* was positively made more bearable by the added hardships of the storm, and when the night was past we were glad to force our chilled limbs and hungry bellies to some sort of effort. Anything was better than to hang to the mizzen rigging and slowly freeze to death. The torn hatch tarpaulin was a serious matter. The merchant service holds no higher duty, where passengers are not carried, than the duty toward cargo. This is often forgotten by men who lack the true traditions of the sea. But our officers were well alive to the importance, not only of bringing our ship around the Horn, but of bringing her cargo through in good condition.

The mate, followed by Axel, Brenden, Frenchy, and Mike, a husky, well-set-up sailor of the starboard watch, went into the waist and worked their way along the deck at great peril. After much trouble they managed to wedge down the flapping canvas, which was under a constant deluge of blue water, whole seas coming aboard in quick succession.

By noon the weather abated somewhat, and we got the ship under fore and mizzen lower tops'ls, and close reefed main upper tops'l. Before nightfall we had sent down what remained of the main lower tops'l, and bent a new sail. That afternoon we experienced an adventure fraught with much excitement to us of the port watch. The jib having worked loose from the gaskets, by constant dipping into the sea, as the ragged crests of blue

water buried the bowsprit and jibboom, six of us were ordered out to secure the sail by passing a three-inch manila line around the sail and boom.

Brenden, Scouse, Frenchy and I were on the weather side, and Joe and Martin went out on the boom to leeward. The job was almost finished, two seas had already drenched us, and we were chilled with the dip in the cold water, when the ship rose to a heavy roller, her bow lifted high into the eye of the wind, and then plunged down into the deep trough between two seas. The momentum was so great that she failed to rise quickly enough, and her jibboom stabbed right into the heart of the on-rushing wall of cold blue water, regardless of the half dozen luckless wretches clinging to the furled canvas with all their might. The great sea went on over us, thundering down on the fo'c'sle head, and rushing aft along the deck in a noisy white cataract of foam. When she shook free we were left clinging to the jibboom like drowned rats, that is, all of us but Joe.

Aft on the poop, the mate heard our cries, and, springing to the lee rail, he yanked a bight of line from a pin and hove it overboard, catching Joe just in time as he rose close along side. When she heeled to leeward, ready hands hauled the half-drowned Joe on board. Captain Nichols had come up on the first cry, and taking Joe into the cabin, he poured out a liberal hooker of whiskey from the medicine chest. The funny part of the whole thing was that Joe was more thankful for the drink than for his escape from certain death, for we never could have lowered a boat in that sea.

We got a watch below that night, and the cook managed to

heat some coffee, but cold salt beef and hard tack were all that the kids contained when we went below for supper. Wrapped in our damp clothes we managed to peg in a few hours of necessary sleep. Life, for a week afterward, was not worth living, unless one held some latent strain of the old berserker flowing through his veins. It was a fight, and the elements charged us and flanked us in midnight fury, increasingly cold as we edged farther to the south in our attempt to round the meridian of Cape Horn.

In latitude $56^{\circ} 29'$ S. and longitude $68^{\circ} 42'$ W. from Greenwich, about sixty sea miles S. W. by W. from Cape Horn, lies the island of Diego Ramirez, a weather-worn rock jutting from the black waters of the sub-antarctic. Ten days after fetching away from the Cape, we beat south and sighted this grim sentinel, the outpost of the tempest and the gale — ten days of such sea-going as seldom falls to the men who nowadays go down to the sea in steamers.

Under conditions of the kind we experienced, every man was put to the test, and his worth as a member of the crew clearly established. Fortunately for us, and for the races representative in our small company — of which we boasted quite a few — no strain of yellow fear developed during the days and nights when the work aloft called for the performance of duty dangerous in the extreme. Not one of us but had been shipmates with men lost overboard, or maimed for life in accidents to sail or spars. Never was there a moment's hesitation to lay aloft, or out on a swaying bucking yard in the black cover of night, to grapple with canvas hard and unruly. No work was too trying, and no hours of labor too long. We thought nothing of the eternal in-

justice of a fate that sent us out to sea to fight for our very lives on a ship far too big for so small a crew to handle safely, if indeed any crew of mere men could ever *safely* handle so large a ship.

Never was there a suspicion of holding back, and through it all, the discipline of the disgruntled warmer latitudes was dropped and orders were quickly obeyed as a matter of course; yes, as a matter of self-preservation. The disgusting profanity of warmer climes was laid in the discard for a while, and we were men doing men's work.

Wet and hunger were the rule; to be chilled with the cold was normal, and our salvation was the constant struggle with the working of the ship. Accidents occurred, and old Jimmy lay in his bunk with his right arm in a bandage from a dislocation due to a fall on the slippery deck. This was roughly set by the captain with the help of the mate and the carpenter. The galley fire had hardly been lighted an hour at a time as the seas flooded everything forward. Cold salt junk — from the harness casks to the kids — comprised the mainstay of our ration, not to mention the daily whack of mouldy, weevily hard tack. Had it not been for an occasional steaming hot can of slops called tea and coffee, we should have surely perished.

Our oilskins were in shreds, boots leaked, and every stitch of clothing in the ship was damp, except when dried by the heat of our bodies. Had I been told of this before starting out — well, I suppose I would not have believed it — and, when I say that during it all we had a fairly good time and managed to crack jokes and act like a lot of irresponsible asses, it goes to prove that man was born to be kicked; be he on a sailing ship around the

Horn, on the hard edge of the Arctic littoral, or in the bloody trenches; fate is always there to step in and deliver the necessary bumping.

When south of Diego Ramirez, we passed the American ship *Shenandoah*, Captain "Shotgun" Murphy, bound from 'Frisco to Liverpool, with a cargo of grain. She was racing two English four-masted barks, and we were told that she dropped her hook in the Mersey a month ahead of them.

When sighting the *Shenandoah* we were close to the wind on the starboard tack, standing about due west; the *Shenandoah* was running free, with the wind two points abaft her port beam, carrying everything to t'gans'ls, stays'ls, and jigger, a truly magnificent sight and the first sail we had seen close aboard since leaving the *Tam O'Shanter* off Sandy Hook.

When abeam we exchanged the courtesies of the sea, dipping our ensign from the monkey gaff, and running aloft our "number," the gay string of lively colored flags, pennant, and burgee — J. V. G. B. of the International Code — the universal language of the sea.

The *Shenandoah* also ran up her number, a spot of color in the beautiful spread of white cotton canvas on her yards. The sky was dull, but the clear air set her off with cameo like distinctness against the grey background of the horizon. The deep blue of the sea smothered white under her bow and, as she rolled gracefully, the yellow gleam of her copper flashed along under her sleek black side, or else we caught a glimpse of her white decks over the line of her bulwarks, as she dipped to leeward.

We had sighted the sail ahead, and, having our starboard

tacks aboard, were accorded the right of way. Hitchen, of the other watch, gathered with a group of us on the fo'c'sle head to watch the stranger drive past us. Being somewhat of a scholar, the little Englishman delivered himself of the following verse:

“If close hauled on the starboard tack,
No other ship can cross your track;
If on the port tack you appear,
Ships going free must all keep clear;
While you must yield when going free,
To sail close hauled or on your lee.
And, if you have the wind right aft,
Keep clear of every sailing craft.”

In obedience to this Law of the Sea, the four-masted ship *Shenandoah* starboarded a point, passing the *Fuller* well to windward, and some five miles south of the Island of Diego Ramirez.

IV

CLEANING HOUSE AND A CELEBRATION

The rough passage around the Horn — seagoing with the bark on — worked the discontent out of our systems, and with the return of fine weather, all hands cheered up and life became more and more worth living. The dog watches were lively, with hotly contested arguments on all topics under heaven. The less the debaters knew about a subject, the more they would have to say about it; resembling in this regard large numbers of more sophisticated folk ashore. Some of the discussions would last for days, being carried on as a serial story, from dog watch to dog watch, with overflow sessions on deck at night. As none of the contenders would ever budge an inch from their positions, the points at issue always remained undecided except in the fish argument, which was settled by the mate.

For a long time Martin, Joe and Scouse indulged in heated discussion as to whether fish was meat, or whether it was something else. Joe contended for the negative, that fish was not meat, while Martin and Scouse insisted that fish and meat were the same thing.

Joe had two against him, but being quicker with his tongue he was able to hold Scouse and Martin pretty well in check.

"If fish ain't meat, wot is it?" demanded Martin. "Is it wegetables, or wot?"

This always stumped Joe, but he stuck to his guns and came back stronger each time: "It's fish, that's wot it is, F-I-S-H-FISH!" his voice rising above everything else in the heat of argument.

The debate finally closed in a particularly violent session that continued as our side went aft to muster in the second dog watch.

"Fish, you say!" shouted the mate at the unheard of disrespect on the part of Joe, who was frothing at the mouth in the defense of his contention. "I'll fish you, you thick-headed ass," and as Joe woke up to the fact that a new champion had come into the field, the whole watch broke into a laugh at the sequel. "Fish, is it? Well, I'll fish you good and proper. Get a pot of slush and rub down the mizzen topmast. Drop a spot, and you stay on deck tomorrow forenoon, *you fisherman!*" The last with biting sarcasm.

Joe lay aloft with his slush pot, and as a bright moon gave him plenty of light at his work, it also enabled the mate to watch him closely. However, this ended the argument, much to the satisfaction of all of us, for it was a bit wearing.

Jimmy Marshall had a large dog-eared Bible in his possession; a red stamp on the title page read as follows: "Property of Seamen's Bethel, Sydney. *Do not take from chapel.*" While lying up with his arm in a sling, having been tossed between the spare main yard and the after bitts, by a sea, he delved industriously into the lore of the good book; and when he was back on

deck again Jimmy refused to chantey to the tune of "Whiskey," and his verses, when singing a rope to "Molly Brown," were painfully proper.

Each night in the dog watch he insisted on reading from the Old Testament, starting at the very beginning. Jimmy had a pair of steelrimmed spectacles, and to further his missionary work, he changed bunks with Scouse, so that he could be directly under the lamp, while the big red-head moved into the best bunk in the fo'c'sle right next to an open port.

Jimmy worked his way through Genesis and got well started on Exodus by the time we picked up the S. E. trades. His pronunciation of the hard names was truly wonderful and required much careful wiping of his spectacles. By the time he was within hailing distance of Leviticus we were again approaching the doldrums and once more we unbent our storm canvas and shifted into the easy weather sails.

Australia, one of the most consistent chronologists of the fo'c'sle, working by the brad-hole-and-peg method, using the stumps of burnt matches, pegged a hole around which he had scratched a circle.

"The 'dead horse' is worked off," announced Australia, as we turned out for breakfast one morning, springing a surprise, as it had been more than a week since the subject was broached last in the fo'c'sle. March 5th, three months since leaving the wharf at South Street! It seemed a year in point of experiences.

"Well," ventured Martin, "the boarding masters are smiling today."

"Yes, the lousy squeezers, I'll bet the Front Street House has a good dinner for the boss on my advance."

"I hope he chokes, Joe," chipped in Fred.

"Choking is too good for them; burning is wot they want," went on Joe, almost forgetting his breakfast in the heat of his indignation. "They take in Australia and Martin and Fred and me, and wot do we get? Wot do we get? Why, a few days' grub and a lousy, dirty bed, wot ain't fit to sleep on, and then they send us out. We go down and sign, and the next day out to sea for us in this bloody hell wagon. A half a kit of dog's wool and oakum slops, took from some dead sailor, maybe, and rotten poor oilskins, and sea boots that is no good. A big bargain, and all for six quid — that's all — only six quid for the lot; a mess of fine wearin' rags. And today they collect their hard earned money and all we has to do is to ride down here on a yachtin' toor round Cape Stiff."

"It ain't right. It's hell, that's it — hell!" agreed Australia. "Lookit me and Fred, and Mike, we was only in port two days. Just two days board and no advance money. Said the British Consul would get us sent back to the *Ettrick*. And that cost us six quid!"

"Nothing ain't right," it was Jimmy who spoke. "You booze, and worse, you sells out your manhood an' your rights to low livin' pigs wot lives off o' the likes o' us. It's principles wot you needs. Young men, take my advice and get principles. 'Ard? O' course it's 'ard to get principles, but they saves you a lot o' trouble an' you can put away a bit. I say live right and you'll be right."

"How old are you, anyway?" demanded Brenden.

"Old enough to know my own bloody business," rejoined Jimmy, scenting a comeback on his reform precepts.

"Well, now that *your* dead horse is worked off you can start in and save until *you* hit New York again."

"Well, if I do save a bit, it's none o' the likes o' a Dutchman like you wot'll 'elp me spend it," and Jimmy hopped out of the fo'c'sle at eight bells sharp. The mate was so surprised to see him leading the watch aft that he promptly sent him up to the fore skysail to loose sail, for the night had been squally and the second mate had taken in the kites, a thing he was prone to do, while the mate always promptly set them again.

After the argument about the advance, we all made up our minds to work off no more dead horses. As Australia put it, "A year at sea and a week in port, and nothing to show for it."

Most of us had slop accounts to clear off with the skipper, and then the velvet would pile up at the rate of eighteen dollars a month, at that time standard wages out of the port of New York for deepwater sailors.

None of the men had shaved for at least a month, and the crew forward presented a truly deep sea appearance; "Rooshin Jews on a ocean picnic," was the comment of Jimmy, who never shaved, and whose whiskers also failed to increase but rather diminished in their moth-eaten way.

On the first Sunday of real fine weather, when the bushes were beginning to get uncomfortable, the fo'c'sle barbers got busy in both watches. Frenchy and Australia were the tonsorialists of our watch and after taking on all hands, Frenchy shaved

Australia and trimmed his mustache. Hair cuts were had by all and the effect was good. Perhaps the feeling of cleanliness due to the trimming had something to do with the desire for a "field day"; at any rate, two of the men, Old Smith, of starboard, and Frenchy, went aft and got permission from the mate to have a celebration.

The coming Wednesday was named, and as we were then on the edge of the S. E. trades, the day broke fine. Accordingly after breakfast that morning the watch on deck, all but the helmsman, were allowed to go forward and assist in removing the contents of the fo'c'sle.

The watch below also turned to, and green and blue sea chests with wonderful "tumble home" sides and fancy canvas tops; plain canvas bags, "the sailor's round-bottomed trunk"; bags with fancy eyelets and elaborate grommets; well-worn blankets; knobby straw mattresses, the "donkey's breakfast" of the sea; and all of the humble furnishings of the fo'c'sle of a deepwater merchantman, were hauled out on deck in the light of day. The fore rigging, the bottoms of the upturned boats on the forward house and the fo'c'sle head, were littered with these things as box and bag yielded up their contents to the purifying action of the sun. All of our salt encrusted gear was rinsed out in a barrel of rain water, saved for the purpose, until free from salt, as most of our clothing was so highly hygroscopic that the least fall of dew would make them damp and clammy.

We then rigged the water spar, and with a liberal supply of sand and canvas and with "*ki-yi*" brooms we scrubbed our home until the place fairly radiated. The scuttle butt was cleaned out

and re-charred, the fo'c'sle lamp taken down and polished, and two hands got busy and gave the ceiling a fresh coat of white paint, brightening up things to a wonderful extent, for this had not been done for some years.

All doors and ports were left open to allow the fo'c'sle to dry out, and at noon both watches lunched together, "al fresco," under the shade of the fores'l. A hamper of chicken sandwiches, a case of cold beer, and a box of cigars would have delightfully rounded out our dinner of pork and pea soup. However, we were in a merry mood and the unaccustomed company of the other watch made the simple fare and weevil-ridden tack taste particularly good. Besides, relations with the after-guard were becoming more and more pleasant. The fight between Tony and Mr. Stoddard had faded from mind in the trying weeks that had intervened and the feeling of anticipation, as we neared the end of the passage, helped to make us receptive to better things.

By gradual stages, without in any way compromising their dignity, our experienced officers assumed a less harsh way of speaking; orders were mandatory to the last degree, of course, but less liberally spiced with profanity. An occasional joke on the part of those aft would send a ripple of laughter among the men pulling at sheet or halyard. The cook also felt the mysterious balmy influence of the Pacific sunshine, and every other day we would be delighted with a big pan of ginger bread in the fo'c'sle. On Sundays we would have duff with real raisins in it.

Honolulu was drawing near; none of us had more than a few dollars of pay on the books, and crews among the island and coast traders were hard to get, with pay correspondingly high.

Perhaps this had something to do with the change of atmosphere. Even those who had the most reason to complain were beginning to cheer up and forget their troubles of the past.

A clean fo'c'sle, dry, well aired bedding, and smiling skies, ushered us into the region of the equatorial rains. The flying fish began to zip through the air again with increasing frequency and the mates as usual gathered them up, but, strangest of strange things, the cook was told to send half of the catch forward. The daily thunderstorms came with their accustomed regularity. At about eight bells in the afternoon watch it would cloud up suddenly, any sails spread out on deck, in the course of repair, would be hastily dragged to the sail locker or under the fo'c'sle head, and presto! — a rumble of thunder would follow the first faint flashes of lightning. Then several bright jagged discharges would come in quick succession, a clap of Jove's artillery, and a douse of rain, followed by the golden rays of the sun streaming through such rainbows as are seldom seen anywhere but in those latitudes.

During a tropic storm at night, just after leaving the trades, we were roused out at midnight and ordered aloft to take in the t'gans'ls. The yards and rigging were soaked with rain, and, as we got to the tops, St. Elmo's fires started to flicker on the yard arms with a pale blue light. The night was black, and oppressive with the hot humid wind, we were wet and clammy, and the sleep was in our eyes when —

“And sudden breaking on their raptured sight,
Appeared the splendor of St. Elmo's light.”

Jimmy Marshall, fear clutching at his heart, refused to mount the futtock shrouds; springing to the forward leg of the main topmast backstays, he slid to the deck while the rest of us went aloft. The stoutest of us, however, were touched with superstitious feelings. The "corposants," as the men called them, started us on a series of ghost stories in the night watches on deck. A few days later we were becalmed in a dense fog, such as sometimes is encountered in the warm, damp region bordering the line. Joe went aft to relieve the wheel just after listening to a gruesome tale. A giant man out in the fog over the quarter reached for Joe when abreast of the open door of the wheel house. Joe nearly fainted with fright, at the sight of his own shadow thrown on the fog wall by the naked binnacle light that the helmsman had taken from the cowl to trim.

THE ENGINEER

MODERN "PYRAMIDS"—THE SKYSCRAPER

BY DAVID C. COYLE *

WHEN the first pyramid was completed, His Majesty the Pharaoh looked at it, and said to himself, "There, I reckon that will stand for a right smart while." His reckoning was correct, and during the centuries when people cared very little for the Pharaohs, their monuments stood unmoved, awaiting an age that would honor them again.

Which of our own buildings will be standing six thousand years hence, when all the present civilization is as far from men's thoughts as that of early Egypt is at the present time? The desire to erect a monument more enduring than brass is part of our mental equipment as it was of Pharaoh's. It is related to the artistic impulses, and, in fact, in the engineering type of mind this is the form which the artistic impulse normally assumes. It may well be that the men of six thousand years hence will look back with some disdain at our barbaric desire to write our names on the landscape. But there is no use in pretending to be anything else than what we are, and if our civilization is barbaric and magnificent, it is quite proper for us to want to leave our characteristic marks for posterity to look at.

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What constitutes a monument depends a lot on the length of the future. Perishable materials will last for centuries, if they are cared for and protected, but a true monument is independent of the continuance of a civilization which will protect it and keep it in repair. What, then, are the materials whose life is independent of yearly inspection and care? First, of course, is stone — granite and other hard igneous stones for frosty climates, and limestone and marble for warmer zones. Then comes brick, hard and sound, laid in cement mortar. Third is concrete, although we do not yet know whether portland cement is as enduring as the old-fashioned natural cement, and certainly along the seashore portland cement concrete is a doubtful material if one is aiming at 3000 A. D. Of the metals, bronze for ties and lead for waterproofing are suitable. This about completes the list of materials that will stand the weather for an unknown length of time. Indoors, in any location where water will never reach it there is a place for terra-cotta, but, outdoors it is only permanent in a warm climate. So if we wish to build for the long future, we must start with our list of available refractory materials, and cut our plans to suit our cloth.

We are not, of course, limited completely to the use of permanent materials. The Greeks used wooden roofs, and their temples might have persisted unblemished to this day, long after the roofs had fallen in, had it not been for wars and vandalism. We are free to use plaster and paint, steel and wood, and still call our structures monumental, provided the essential character of the building is not dependent on these ephemeral additions. And although, we cannot be quite so carefree about roofs as were the

Greeks, because of the prevalence of weather in our climate, we can build as they did, for all time, and then decorate for our own generation.

Fortunately, for our reputation with posterity, we, like the ancients, are not in a position to do too much permanent building. What we construct for the sake of dividends must necessarily be in large part ephemeral; our successors will have the opportunity, which they will no doubt appreciate, of replacing our work by structures more in accord with their newer ideas. Even our public buildings, if left to the jungle for a few hundred years, will show a considerable mortality.

From the engineering standpoint, a structure that might last for several thousand years would be expensive for its size, and if it were particularly large, it would be very expensive indeed. Structurally it must be of stone. The weight would be large, and the foundation must rest on sound rock not liable to quakes nor to submergence in the sea. The climate preferably should be less violent than that of New York.

The simplest acceptable design might be a double hollow cylinder, with a large court inside and with the two shells close enough together to carry permanent floors. A permanent floor, though, is rather limited in its possible applications. For short spans, there is the Egyptian style of stone slabs and beams. Slightly longer spans could be made in adhesive masonry, and small quantities of long span work, with bronze reinforcement, might be used. Vaulting would be possible in a double cylinder, but the thrust would either have to be carried by bronze rings or by tensile bonding in the ring wall. The latter is not a new fac-

tor in masonry, a number of the ancient domes having no other visible means of support, but it has the disadvantage that a rather light earthquake will throw it down.

To avoid this difficulty, we may resort to the hollow cone or pyramid, shaped like an ordinary church spire, or modified toward the beehive or the pagoda form. Such a structure, with the lower part of the granite ashlar, might go as high as 1,000 ft. It could have domed floors, the thrust of which would be carried by the ring compression of the conical wall, and finally transmitted as an oblique reaction to the rock below. At the base, it might be possible to carry the superstructure on an immense domed hall, or on a ring of arches with a domed interior ceiling, suitably buttressed on the outside. The exterior of the tower could be terraced with colonnades, if desired, so long as the carrying cone was allowed to run undisturbed from top to bottom.

Within the structure, less permanent work could be built, as a sort of furniture, to make it habitable. Elevators could run up the slope of the cone. Steel floors and galleries could be built in. Even plumbing would be safe, since its leaking would not affect the main structural members. The roofs or decks would be waterproofed with copper or lead, and paved if desired, while the interior floors, of stone or glass slabs, would be carried on terra-cotta spur walls from the domed ceilings. In well-protected locations, steel bands could be built into the walls to serve for as long as they might endure, as a protection against earthquakes.

So much for the vision of a twentieth century monument to scrape the sky after our characteristic manner. The other and

much less expensive way to attain bigness is by spreading out over the ground. We are now prepared to attempt domes of a size beyond the capacity of the old builders who were innocent of integral calculus. All domes, however, have one ticklish characteristic, in that they require a tension ring somewhere, to keep them from splitting open around the bottom. The shape can be modified so as to move this tension ring up or down, but it can never be eliminated. The worst sort of dome is the bulbous form, common in the near East which will inevitably split open at the level of its greatest diameter, unless it is strong enough to stand the tension. Bonded masonry has a considerable but uncertain tensile strength, and it is probable that a good many bulbous domes stand up by virtue of this fact, and without metallic rings. However, a position under one of these domes is not one an engineer would choose to occupy during an earthquake.

The ordinary spherical or conoidal dome, which appears on so many of our public buildings, is next in instability to the bulb. It has a tensile area beginning about 45 deg. from the top, and increasing down to the springing line. We, now, insert rings in this part of the dome, which will make it safe so long as the steel resists corrosion, but the early builders were apt to depend on ignorance or on the tensile strength of the masonry. In the case of St. Peter's Cathedral in Rome, a chain was added when the masonry began to crack.

There are three forms of a dome which do not have tension in the dome shell — a round dome of low rise, a cone and a concave conoid or pagoda form. A rounded dome of low rise is the equivalent of an ordinary dome with its lower, tensile, part cut



The Engineer

off; it has only compression in all directions. The latter is true also of the cone, and of the concave conoid form. In all, there is a tension ring at the springing only.

For monumental construction, designed to outlast the life of steel, one may treat a dome in two ways. One is to use hard bronze instead of steel. The other is to use buttresses to carry the thrusts down to the foundation level, where the earth itself acts as a tension ring for the whole structure. By either of these devices, we can now build a structure that will exceed, in size, anything our predecessors have done, and that will, at the same time, be permanent in the monumental sense.

These, then, are the directions in which we may look for our opportunity to leave an enduring record of our passage. Such an enterprise is fantastic, as fantastic as the pyramids; but, too, our civilization is no less fantastic than that of the Egyptians. When we in turn have passed on, leaving a detritus of gold coins and broken glassware, and a few comparatively uninteresting tombs, there will also be among our legacies some engineering feats worthy to rank with those of other civilizations. Dams, canals, and tunnels, we have already. It would not be inconsistent with our prodigal vitality and our unprecedented control of power, if we were to add a few tremendous architectural monuments to the list.

II

THE FAMILIAR SIDE; AS THE WOMAN SEES HIM

BY A CIVIL ENGINEER'S WIFE *

IF it were the scorching sun of the equator burning one's face, or the arid winds of the steppes whirling the permanent wave out of one's hair, or Mexican banditti racing through the camp at midnight, that disturbed one's dreams, one could bear it with fortitude. But the hot shadowless sun of our own west, nerve-wracking winds, the constant grit of blowing sand, the scrub pines, the rattlesnakes, the bunty scrambling prairie-dogs, are not essentially romantic. And instead of Mexican brigands we have 100 per cent American bootleggers, with their guarded automobiles swooping through the settlement in the small hours, the smooth put-put of the racing engines causing grizzled foremen and swarthy laborers and the mincing store-keeper-postmaster to turn over in their beds.

It is a curious but authentic fact that engineers figure in fiction as gallant, athletic, long-limbed persons clad in flaring breeches and immaculately shining boots; they are found in vaguely designated tropical climes and go about rescuing Spanish maidens from their proper suitors and frustrating in the same

* Use of extracts authorized by V. T. Brighton, Asst. Editor, Engineering News-Record.

breath and by prodigious muscular efforts certain greasy-faced revolutionists in the latter's attempts to dynamite the canal — or the bridge or the mine or whatever the author pleases. Following this truly remarkable display of agility it is presumable that the hero of the tale gives up engineering as his tender plans with the senorita invariably include such stable things as a permanent home and dwelling-place — usually with a sunken garden, a deep fireplace and a Russian wolfhound — to say nothing of various offspring — in perspective. Unfortunately for romance this is a vastly fallacious notion. The engineer, by the very nature of his thinking process, is not impulsive. He is deeply imaginative but never reckless. And his boots are usually anything but shining. And furthermore he is quite frequently already married before encountering the passionate-eyed senorita!

Along in December the storms come and the work freezes up; the machinery and paraphernalia of construction are packed away or shipped out and one glorious day, before Christmas if we are lucky, we take train or boat or auto cityward.

I intoxicate myself with the theatres; I revive my soul with symphony concerts; I store up energy and thrilling life from the pulsing crowds of people — people — people. And I go to church and renew my heart in the swelling tones of the organ — in the sight of the worn grandeur of the altar.

As for my husband, I daresay he conducts himself in much the same manner. At least I have known of long hours spent in luxuriating in the bath-room and of hilarious revivals of old fraternity associations.

Then one day he comes home with a look in his face that I

have come to recognize. In twenty-four hours, or thirty-six or seventy-two, he must be at some unheard of place upon the earth's surface. So far this has been within the United States, but even this boundary offers a wide limit. Between gasps of telephoning the movers, writing hurried notes and packing away my newly acquired clothing, we endeavor to discover the exact location of our destination. Occasionally this entails calling at the Post Office for assistance.

Before I am fully aware of it we are in the car, unless our journey is *too* long, and I am wondering if the light and gas are turned off and if I left a mailing address.

Strangely enough, the day on which we turn our faces toward the field is no less glorious than the day we start toward the city, our task for the year complete.

To be sure there are years in which I get no glimpse of my own loved household furnishings, and at one period for two whole years I lived within the same four walls, while the attention of the head of the house was engaged upon the construction of a viaduct. But I am always happy when the day comes to strike our tents and fare forth into the wilderness.

Ultimately we wind up at a settlement, sometimes a town of as many as two hundred souls, sometimes only a camp. The trail may lead in almost any direction toward the sand stretches of eastern Colorado, or the muddy cotton fields of Mississippi, or the neatly wooded slopes of Ohio with their criss-crossed rail fences, or toward that lovely langorous Bayou Têche country where the Spanish moss waves gray and wraithlike from the trees, the early japonica blooms scarlet and the creamy magnolias hang

heavy with fragrance; it is there that the natives, and Ca'jens as the negroes have contracted the name Acadian, speak an odd and pretty French-Canadian patois.

Or perhaps the trail ends as it did a month or so ago, in the Nebraska Bad Lands. To the south are buttes rising like buttressed castles and canyons like sudden black gashes. On the north stretch the sandhills, dotted with sage-brush and yucca and tumbleweed that blows unceasingly. The arroyos grow delicately amethyst as the sun's shadows slant and a pink rim round the horizon, contrasting with the solid turquoise blue of the sky, gives the first hint of the approaching of enchanted nights. Enchanted nights when the sky becomes deep sapphire before our very eyes and the stars glimmer like great yellow flowers so low as to be plucked. Last night the Northern Lights flung up long, cold white rays that flickered and danced like monstrous ghostly fingers pointing the way to Heaven — and the whole universe of suns and planets whirled so near I had almost thought to see the moons of Mars.

Indeed, it is well that we have those respites for there is much that is anything but beautiful.

As I wrestle with the devil-inspired whims of my stove, as I eat canned foods until my tongue has a perpetually *tinny* taste and ham and bacon until I wonder if my very insides are pickled in salt, as I cope with the demoniac antics of a small tin basin and recall the impeccable plumbing of my latest apartment in the city — on these too frequent occasions I reflect that an engineer's wife must have an amazing amount of fortitude, a philosophical outlook and a sense of the ridiculous.

Nomads that we are for at least ten months out of the year, it is nevertheless a fact that after the first meal in our new abode — be it tent or cabin or where — an odd feeling of being at home pervades us. This is an elusive feeling, difficult to analyze and flees at the first mention of its being. But it returns.

True, there are certain bits of a household that always go with us — a funny old clock with a squeak in its in'ards — a battered and worn cribbage board — a squatty, gay little candlestick that has practical use — my own letter-case, a Navajo blanket and a paper-weight. This paper-weight is of no practical value. And yet it accompanies us. It is a crystal ball mounted upon a black base; inside the crystal rears a tiny castle with red towers and green stones under its bits of windows. You've seen them. As the weight is moved snow flies inside the crystal, swirling 'round and 'round until it finally settles in little drifts upon the castle and green rocks. I have come to the conclusion that the eddying whirls of snow exercise some occult influence upon my husband — at least I have watched him sit with the paper-weight in his hands, moving it, letting the snow settle slowly and then disturbing it again, his gaze abstracted, far-away, until suddenly he drops the weight and bends swiftly over his work as if to seize inspiration before it escapes him.

Pages galore have been written of the work that the doctor of medicine performs, of the wonderful hands of the surgeon; much has been said of the architect, the teacher, the minister of the gospel; more has been told of painters and poets and musicians. But comparatively little has been said of the engineer.

One reason for this, I fully believe, is that the engineer is not

loquacious. In this age of confessions and self-advertising he has had few words to say for himself. He has ever let his proud title be stolen with impunity.

It is surprising, indeed it is appalling, to discover what the world at large thinks of an engineer. Of course to the lettered the title possesses its own honorable estate but to far too many it is a vague name that may mean anything. Not long ago a university woman asked me, "Just what does an engineer do — survey the roads or something?" And another, with the light of charity in her eye and the key of a scholarship fraternity upon her blouse, offered for my husband an old pair of overalls that she somehow possessed, mentioning at the same time that the bricks must hurt his hands. To the former I replied briefly, "Sometimes." To the latter, tersely, "No, thanks." Experience has taught me the futility of explanation. To quote the subsequent remark of a garrulous landlady who succeeded in pinning me down to a résumé of the engineer's exact activities — "To hear her tell it, you'd think he runs the whole thing."

I do not mean to imply that these instances are wholly typical of the general attitude, but *where* would that one be found who would fail to recognize by name any of the other professions!

The engineer is an artist, a true artist who works for love of his work, who creates for the joy of his creation. Let my husband but hear of a new and stupendous project and a longing, eager gleam flares into his eyes as he murmurs, "Gosh, I would like to be on that job." And there is that in his tones that is fairly reverent.

Above my eyes is a picture cut from the rotogravure section

of some newspaper and *glued* upon the wall. It is a photograph of a project of considerable magnitude, now completed, on which my husband was one of the least of the corps of engineers. It is scarcely decorative but my husband's hands placed it there with such care, I have seen his eyes upon it with such wistful joy in their depths, with such pride, with such glory in its completion that I could not think of removing it. And there it sticks — with my packing box desk below it.

Inevitably an engineer, unless impelled by the pressure of actual financial stress, will choose the project that stirs enthusiasm within his heart, rather than that one that brings him the most money. The monetary consideration seems to be the last. There have been many times when I have bit my lips to keep from saying, "But what about the salary" or share or investment or whatever it is. And there are few engineers' wives who will not bear me out in that statement.

For all his seeming literalness of mind the engineer holds in his heart the divine flame of imagination — and sometimes genius.

It is true that by the nature of his training and thinking habits he sticks to facts. There is no compromise. A thing is — or is not. Reason, logic, proof are the keynotes of his mental processes. His is one of the most exact of sciences. Where I leap to a conclusion my husband asks himself — Is this true? Why? Does it prove? — before his decision is made. And once made that decision is as firm as the concrete with which he deals. Which fact, I might add sometimes causes fur to fly!

The wife of an author of my acquaintance has told me of her

efforts to keep things quiet while her husband works. Perhaps authors are a law unto themselves. This I know: I experience as great a difficulty in dragging my husband's attention up from the depths of thought into which he descends. But the papers covered with scrawled figures, the half-done sketches, the arrowed and lined and mysteriously dotted plans — all these I treasure as carefully and refrain from disturbing as my friend does her husband's most interlined sonnet.

To the engineer is the God-given privilege of transmuting the glowing vision he has dreamed into a permanent and lasting monument. A monument not to himself, not even to his profession but to the needs and progress of humanity.

Well, we have high moments of joy — and we have also long days of problems that are solved only to make room for other problems, of the tension of a responsibility that never relaxes, and of hard, grinding, monotonous drudgery. I say "we," because the engineer's wife shares her husband's life and work no less than do the wives of men of other professions. And though that life may lead her to strange places it is one that may be lived with joyous fullness. It is a life of contrasts and of vivid and glowing contacts. From roaring city to bare and sand-swept desert — from the cosmopolitan and traveled rancher who has seen the frontier cities of every land to the provincial city-dweller who has never been beyond the limits of the elevated.

And it is a life that will take us, we hope, to far lands and strange countries and age-old cities — lands and countries and cities that though strange are nevertheless dear and familiar.

We treasure the memories accumulated here in America but

there is a voice that urges us to go farther. It is the voice that calls to the explorer, the discoverer, the pioneer, the adventurer. Some engineers answer that call, some do not. "Chacun á son metiér!" But I have yet to hear of the engineer who was wholly deaf to that voice.

Evenings of hearing only the desert's "song of a thousand years," the low hushed murmur that never dies — long evenings of quiet that is punctuated only by the yowl of a coyote, the flicking of the sand against the house, the far-away thud of an engine racing on the road over the horizon — night after night of solitude such as this have led us to varied pursuits. The radio has been Heaven-sent. Our cribbage board, as I have said, is battered and worn. But our favorite and loved diversion is reading. What discussions we have engaged upon! What theories we have explored! What stars we have traced in their courses! And what travels we have taken via the printed page.

Of all these books one of our most favored is "Green Mansions," and somehow, in that irrational way that such customs grow, we have taken to calling our own hopes and dreams, our castles in Spain — Green Mansions.

Green Mansions mean to us many things, and all of them are magic. The green tangled forest growths of the tropics, the barren steppes surrounding Lhasa, the dirt and smells and narrow, mysterious streets of Cairo-town, the muddy swelling currents of the Nile, the sordid rifled majesty of Petrograd, golden Samarkand, lovely Tahiti, and the Forbidden City with its ghosts of ladies clad in Imperial yellow and jade buttoned emperors and wise and long-passed sages.

Names to conjure with, words to revere, phrases to stir within the heart strange feelings of kinship, of blood-ties, of haunting familiarity, of unutterable fascination and longing. All these things we must seek. All these things we must know. So runs the building of our Green Mansions.

III

BUILDING FEATS IN SKYSCRAPERS

UNUSUAL CONSTRUCTION AND GREAT WEIGHTS TEST THE SKILL OF ENGINEERS

BY SILAS BENT *

A CORDON of police reserves was posted in and near Times Square to protect the spectators of a giant feat. A modern Hercules, steam in his nostrils and steel in his muscles, was lifting to an unprecedented height an unprecedented weight, so far as building operations go. A truss 144 tons heavy was being hoisted with groans and snorts to its place over the auditorium of the new Paramount Building at Forty-third Street and Broadway.

Washington's Birthday was chosen for the event in the hope that not so many people would be about. The lifting began at 9 in the morning. Eight such trusses must be put in place, 120 feet above the sidewalk. After the strain of the initial lifting the work went ahead rapidly enough.

But it may be confessed that there was a good deal of trepidation about the outcome of this first test. Hercules might topple over with his load. If any part of the lifting apparatus gave way

* By permission of the New York Times.

under the strain, the immense weight might fall. So Forty-third Street was roped off and motor traffic was rerouted for a while until the thing had been safely done without so much as a sprained ankle. The second of these trusses was lifted three days later.

This job is but one of several unusual construction problems posed in New York recently. To build a skyscraper is a mere chore. The whole process has been standardized and can be calculated to the last rivet. But the Paramount Building, the projected Level Club in West Seventy-third Street, the completed Madison Square Garden and Mecca Temple, after 10,000 years of building, demanded special fertility in resources.

A GREAT LIFTING FEAT

The conspicuous part of the new Paramount Building will be a thirty-three-story office building with a tower above. This is what the tourist will see from the Broadway rubberneck wagon; but to the architects and engineers this part of the work was as simple as cutting cheese. What tested their ingenuity was the auditorium west of the building, to house a huge motion picture theatre; for here they had to undertake the greatest lifting feat, considering the height involved, ever proposed, they believe, in building construction.

There are to be no columns in the auditorium. The gallery will be hung from the 120-foot beams overhead. There you have the problem: The beams or trusses must be strong enough to span 120 feet without crumbling, with enough added strength to support the roof and enough more to uphold the gallery. To meet

these requirements, with the usual plus, there must be in each truss 144 tons of steel; and each must be lifted to a height corresponding to the eighth floor of The Times Annex adjoining.

Now, it is impossible to move 144 tons in a single load through the streets of New York. The maximum load is about forty-two tons; so it was necessary to haul the trusses in pieces to the spot and there rivet them together—each of them contains 4,000 rivets an inch thick or more. Thirty separate pieces must be assembled to create a single giant framework sixteen feet high. There are eight such trusses, each to be supported at either end by a column of steel, itself weighing fifty-five tons.

Let us suppose that we have two of our columns erected, duly braced, and that we are about to set a truss on them, ready for riveting. When in place the truss will be parallel with Forty-third Street, and it will be 120 feet above the sidewalk; that is, if twenty-five six-foot men stood one on the other's shoulders the topmost man could chin the lower part of the truss.

Assuming that each of our six-footers could, as a matter of all-day work, lift 300 pounds from the ground and hoist it above his head, nearly a thousand of them would be needed to budge the truss. Of course, man has long since delegated such back-breaking tasks to the tireless steam derrick. The obvious, and slow, way of lifting the truss would be to hitch a derrick to each end, and hoist it as high as the derrick could reach, build a structure under it, move the derricks up and repeat. In an impatient world no such slow-gaited process can be tolerated. It would take weeks for each truss. But there is a fellow who can do the work in twenty minutes.

The fellow is a traveler, but the whole tribe of travelers since the days of Marco Polo has included no such traveler as this one. This particular traveler is bigger than any of his predecessors. His weight is rated in tons to a man's pounds. Stripped and gaunt, he has 226 tons of steel in his ribs and legs, and he sports on either shoulder a derrick that weighs 75 tons, in addition to two 15-ton engines that manipulate the derricks. He is 84 feet tall, and each of the derricks is 50 feet high, with an arm, or boom, 75 feet long.

The traveler moves on steel rails such as are laid for our crack trains; but two of them are not enough; he must have thirteen, five of them flange to flange on one side and five on the other, with three in the middle. The rails are fastened to twelve-by-twelve timbers grouted into solid rock. Upon the rails are steel rollers, and on the rollers rests the traveler for his journey of 125 feet, as he moves backward across the city block to lift truss after truss into place. When he finishes his humped back will overhang Forty-fourth Street.

EACH HAND A HUGE BLOCK

The traveler, a seven-story moving platform, was specially made for the Thompson-Starrett Company, which is constructing the building, and so were the hands for the arms of the derricks. Each hand is an immense metal block with eight sheaves, and its seventeen fingers are ropes of steel. The weight of these blocks, the friction of the steel strands and the rivets in the trusses bring the total load to be lifted up to 150 tons.

It must be lifted with care, so that neither end of the beam

may sag below the other and throw the major burden on a single engine. Man has outspun the spider, and the strands of steel are equal to far more than will be demanded of them; but consideration must be shown for those engines on board the traveler.

Once these eight trusses are fitted neatly on their slim pillars of supporting steel the worst of the job will be done. It will take about six weeks to do this much, although a single lift requires but twenty minutes. There are, to be sure, some ninety-ton trusses to be placed sloping horizontally within the auditorium to support the balcony; but they are comparatively light, and the traveler may be fancied as smiling metallically as he hefts them into place.

At the back, or the Forty-third Street side, the gallery will be on a level with the sixth floor of the Times Annex, and it will slope forward to correspond with the third floor, where the first row movie fans are sitting. To walk from the back to the front is like descending two flights of stairs.

A. E. Barlow, the engineer in charge of this contract, believes that such a load as the roof trusses has never before been lifted in building construction to such a height. In the new Madison Square Garden, west of Eighth Avenue, between Forty-ninth and Fiftieth Streets, the span was wider but the weight of each truss much less.

HOW THE GARDEN IS BUILT

The Garden auditorium is 200 feet wide—the length of the trusses—and 375 feet long, and 19,000 persons may be accommodated as spectators. Each of the 20 trusses weighs 68 tons, and they were put into place with a traveler. James Stewart &

Co., who had this contract, accomplished a still more remarkable feat in the speed with which they pushed it to completion. The construction took just 249 working days. Three months to a day after the steel skeleton was completed the building was thrown open, and in its first week netted more than enough profits to pay for the added expense of the haste.

Even more interesting to engineers was the way in which two opposing thrusts were made to counteract each other. Instead of single columns, such as will support the trusses of the Paramount auditorium, there are two columns at each point around the Garden auditorium. The outer column supports the long trusses and the immense weight of the roof. The inner column, which comes flush against the roof but is not riveted to it, supports two huge galleries. And since the inner columns are tied rigidly with steel to the outer columns, the weight of the galleries tends to push the support upward.

It is the pump-handle principle in action; but the weight exerted on the pump-handle (the galleries) counter-balances the weight of the roof, so that the handle remains securely stationary. The downward push of the outer columns, weighted with the roof, offsets the upward push of the inner columns.

A POSER FOR ENGINEERS

In the Level Club, construction of which has just begun, the Stewart Company will be asked to build an auditorium four stories above the ground, strong enough to support twelve stories above it. The three lower floors will be used for a lobby, dining rooms, kitchens, grillroom, barber shop and so on, and the fourth

floor (really the sixth, for there will be a basement and sub-basement) will be an auditorium 135 feet wide and 92 feet long, with no interior columns.

That is to say, its roof or ceiling must be strong enough to carry the load of twelve bedroom floors above it. If the sixteenth floor had been given over to the auditorium (which will serve also as a dance hall) no problem would have been involved more serious than supporting the roof; but those who demand modern steel buildings want what they want, and the fourth floor was chosen.

Foot for foot, the trusses required here will be heavier by far than those that span the Paramount auditorium. They are but 92 feet long, and they will weigh 135 tons each, as compared with a weight of 144 tons to 120 feet. They will be the heaviest trusses ever utilized in a structure of this sort. In bridges, such as that at Hell Gate, much weightier material is employed. The four Level Club trusses are frameworks 12 feet high, thus occupying the space of one floor in the building; and the braces have been so designed that the space can still be employed for bedrooms and storage, with two continuous corridors running the length of the floor.

In Mecca Temple, which stands on the block bounded by Sixth and Seventh Avenues, Fifty-fifth and Fifty-sixth Streets, the problem presented to the Stewart engineers was an enormous domed roof, to conform with the Oriental traditions of the secret order. There is a large banquet hall in the basement, and an auditorium to seat 5,000 on the first floor. In an earlier day it would have caused some headache to figure out how to support the loads

from the upper levels and the roof. The lofty auditorium contains no columns, and the balcony and the gallery are anchored into the walls as in other buildings.

The dome is the thing. It consists of a structural steel frame with four principal arch ribs. Between these are twelve smaller ribs, supported at the upper end by a circlet of steel at the apex. The ribs in their lower sections consist of two chords, the outer maintaining the line of the dome and the inner bearing most of the load. The diameter of the dome is 108 feet and its rise is $37\frac{1}{2}$ feet. The unusual shape of the balcony made it necessary to use double diagonal girders, which are rare in such construction, and the placing and riveting of the steel shapes involved special skill.

While the riveters are busy on the Paramount Building and the Level Club, work will begin on a new thirty-five-story building at 50 Broadway. It will be a quite ordinary skyscraper of the kind that no longer excites the despair and the exultation of engineers. It will be standardized, with the usual rectangular skeleton of metal and the usual curtain walls. But on this site once stood the Tower Building, a seven-day wonder in the early '80s of the last century.

THE FIRST SKYSCRAPER

It was an amazing project, all of ten stories high, and it was called the "daddy of the skyscrapers," for it was the first structure on Manhattan Island to have a metal skeleton frame. If the truth must be told, the first six floors were of masonry, while the other stories were braced with iron beams bolted together,

superimposed on the masonry walls, which were six feet thick at the bottom. It was one of the forerunners, nevertheless, of those structures which today make the ragged skyline of Manhattan.

"Temples of Western faith," Rupert Brooke called our towering office buildings. He meant, presumably, that they are the shrines and sanctuaries of Big Business, the religion of this New World. But it was a decade ago when he wrote that. In that day the Woolworth Building was the crowning architectural wonder of this continent, and the worshipers in the temples, content with its beauty, had not yet begun to think up fantastic tasks for their builders.

Such new beauties as they achieved afterward came in answer to prosaic municipal building laws, demanding an approach to the pyramidal type; but the new tasks, the demands for ever-wider spans and ever-weightier trusses and ever-stranger shapes—where will the new tasks end?

IV

BUILDING A BRIDGE OVER THE GRAND CANYON

BY R. L. DUFFUS *

FAR out on the Painted Desert, 135 miles from Flagstaff, the nearest town, a steel worker runs along a narrow beam, leaning to the wind as he finds his sure-footed way. A blacksmith takes glowing bits of metal one by one from the burning coals and with a quick flip of his tongs shoots them to a man thirty feet above his head. The riveting machines beat like machine guns against the silence of the mesa. Four hundred and sixty-seven feet below the level where these men are working, the Colorado River, on its way to that terrific series of plunges which lead to the majestic depths of the Grand Canyon, slides southward at the rate of ten miles an hour.

One hundred and fifty-two years ago the Spanish Father Escalante, coming to this spot, described it as "a corner entirely surrounded by mountains, very often of colored red earth of different formations." It was from such descriptions that the Painted Desert got its picturesque name. A little less than a hundred years later Major Powell of the United States Geographic Survey, making the first complete trip through the Grand

* By permission of the New York Times.

Canyon, found here walls of "white, grey, pink and purple, with saffron tints * * * set with a million brilliant gems."

The steel workers, as they ride their girders into place and send the rivets home, have one of the finest views in the world. Looking down they see the muddy reddish river, shrunk at that height to the dimensions of a brook; the twisting canyon, so tortuous that the first explorers who rode down the stream thought that it plunged headlong into a cavern in the mountains; and the desert, with the Vermilion Cliffs glowing in the distance. The desert is a great tableland.

Approaching the river from the south the traveler is at first unaware of its existence. He sees only the plain, running apparently unbroken to the 1,500-foot crest of the gaudy Vermilions. Then, suddenly, the desert falls away into a deep and narrow slash as if some giant had gouged it with his bowie knife. Through this slash the river runs, worming its way deeper and deeper, through layer after layer of rock, over rapid after rapid which proved constantly dangerous and sometimes fatal to the navigators who once passed that way.

Such is the gorgeous setting of the new highway bridge that the State of Arizona is building at Marble Gorge, not far below the Utah line. The wonders of modern steel construction and the magnificent mystery of canyon and desert have rarely been brought more dramatically together.

Not that the Marble Canyon bridge, which will be opened for traffic in October, is what a bridge builder regards as a serious problem; it will not be the longest, the highest, the heaviest or the most costly bridge in the world. But both the bridge and

the manner of building it are showy enough from the layman's point of view. Its single span, 616 feet long, will leap from wall to wall of the canyon. This would have been a simpler thing to accomplish had it been possible to haul material to both sides of the canyon. But the approach had to be from the south, since there was no practicable road leading to the north side. Hence the first job was to push the first half of the arch to mid-river, that is to a point 308 feet from the southern wall. To hold this part of the arch in place cables had to be run back to steel "dead men" in shafts sunk far back in the rim rock. A slight miscalculation and the whole enormous mass, workers and all, would go into the river.

On the top of the arch was erected a tower and from this tower cables were run to the north wall. Over these cables were sent the girders with which the northern arch is being built. This was all in the day's work of a bridge construction gang, who are not supposed to think too seriously of risks or to spend too much time gazing at the scenery. It was, however, as spectacular a feat as the Colorado ever witnessed, requiring skill, determination and pure courage to which even Major Powell would have had to take his hat off. One man, La Fayette McDonald of Kansas City, slipped from a beam and went to join those earlier victims of the river—explorers, prospectors and immigrants who have at different times and places dared its treacherous waters. For the Colorado, even with a bridge across it, is no domesticated river. It is as wild as the wolves and Indians used to be. And it makes no treaties and cannot be exterminated.

But one man's mis-step never holds up a bridge job. The

work will go on until the two arches are securely laced together and the roadway is thrown across their top, making the passage of the Colorado Canyon far simpler than a trip from Forty-second Street to Central Park at the rush hour. It is an interesting detail that a part of the cost, \$100,000, was appropriated by Congress from the tribal funds of the Navajo Indians. Thus the Navajos, whose ancestors first worked out the desert trails and found means of negotiating the precipices from rim to water, will help pay for this modern successor to the old pathways—and possibly will roll over it at twenty miles an hour in gasoline-driven vehicles. The rest of the sum needed, \$230,000, was appropriated by the State of Arizona.

Arizona's need of the bridge will be obvious to any one who glances at the map. The State's northern boundary, which was run with mathematical precision along a parallel of latitude, leaves a large corner north of the river. When the river is behaving itself this corner can be reached by means of the crossing at Lee's Ferry. But the river in flood time, usually in May and June, declines to behave itself. In the canyons large masses of driftwood stranded thirty and forty feet above the normal level are of common occurrence. Major Powell's party, in Marble Canyon, below the site of the bridge, found driftwood 107 feet above the stream. Only a few weeks ago a party of motorists, crossing by the rough ferryboat that still plies between the north and south banks at Lee's, were overturned in the raging current and three of them lost their lives.

Prudent Arizonians do not attempt to cross at such times, and at all times the difficulties are such as to discourage most

motorists. When the river is high and the Sheriff of Coconino County wishes to transact business at Fredonia, which lies at the extreme northern point of his jurisdiction, he finds it necessary to travel nearly 1,000 miles through the States of California, Nevada and Utah.

The same obstacles which have made the Sheriff's life an unhappy one have shut off some of the most splendid scenery in America from easy access by travelers. The nearest accessible railway point is Flagstaff, and until recently the roads between Lee's Ferry and Flagstaff have been nothing to write home about. The bridge makes a through route possible and opens up a region that will probably attract many thousands of visitors. To the south of the great canyon lie the South Rim country, with its majestic, gouged-out precipices, the Petrified Forest, the Hopi villages, Rainbow Bridge, Monument Valley, Navajo Mountain and an exquisitely lovely desert country. To the north, across the bridge, are the Kaibab Forest, with its great herds of deer, Zion Canyon, Bryce Canyon, Cedar Breaks and the Vermilion Cliffs, which have already been mentioned.

Going north from Flagstaff, or reversing the direction according to his convenience, the tourist will now easily be able to visit them all. Thus another one of the great lonely places of the continent will have added to its atmosphere the whiff of gasoline and the scent of many campfires rising at twilight.

THE AVIATOR

CHARLES A. LINDBERGH

A SHORT BIOGRAPHY *

BY RUSSELL OWEN

HIS accomplishments stand out clearly as the work of a pre-eminent genius of the air. His name is written with Lillienthal and Wright. Not since the first wobbly plane hovered uncertainly has so much been accomplished by one man. All the struggles and triumphs of the pioneers of flying, all the progress marked by the sacrifices of men who gave their lives to the science of flight, have been summed up by Lindbergh and written across the sky for men to marvel at.

A Lindbergh was bound to come to aviation. The good fortune is that he was a man who typified in his character and personality the high aspiration of those who made his work possible. The Lindbergh saga is not yet closed, for his work is by no means ended. But it is almost incredible that with the passing of months he has grown in stature, in accomplishment, in conforming even more to the ideal which has been set up for him and which he has set for himself.

Lindbergh's simplicity and modesty are such that it is hardly probable that he lays down for himself rules of conduct. But

* By permission of the New York Times.

it is not possible to be with him without realizing his innate dignity — a dignity which comes from complete devotion to his profession, and the knowledge that he is partly the result of circumstance and the labors of tireless men whose names are obscured in the drudgery of the experiments, on the results of which he rode to fame. His natural restraint has contributed as much to his supremacy as his deeds. He looks back as well as forward and places himself as only one among many who have devoted their lives to conquering the air.

WHEN HE SPEAKS OF HIMSELF

There is no bravado to Lindbergh, no swagger, no falsity of expression. Only one other man has the writer known who could talk of himself with a complete lack of self-consciousness, and he also was an aviator who died in attempting what Lindbergh accomplished — Lieut. Commander Noel Davis. But not even Davis, brave and simple soul that he was, had the curious magnetism and poise which have distinguished Lindbergh. There is no accident in Lindbergh's hold upon the affection of the world. When the light of clean laughter leaps out of his eyes, blue as the sea which bred his Viking ancestors, he seems to deserve, as few men have, the title of the happy warrior. He is youth and idealism and courage dedicated to a dangerous task.

But there is another side to Lindbergh which is as marked as his personal qualities, and that is the practical common sense and the knowledge of his profession which he brings to bear upon his work. No man seems to take more chances, and no man, within the limits of a career in which life is pitted against experience,

takes less. No aviator in the world grooms his plane with more care or plots his course with greater accuracy. So far as is humanly possible he makes sure before starting a flight that he is doing everything to assure his safety. That done, he takes to the air with confidence, and if he should ever fail, it will be because of something which no man, no matter how skilled, could have foreseen.

This is one reason that the saga of Lindbergh has been written so successfully, and it is an aspect of his career which should not be under-estimated. He has taken chances in poor planes as has every other pilot worth his salt. He flew decrepit Jennies on barnstorming trips and carried passengers in planes in which he would not now permit any one to accompany him. He laughs at the memory of those days, even though he knows they were a valuable period of training. He has pulled himself out of difficulties on his Latin-American trip because of his experience in getting out of little fields in old planes.

His landing in Belize in British Honduras was an example of that. Lindbergh had not intended to stop there because the landing field was dangerously small. But before he reached Belize two or three cylinders of his motor cut out and it threatened to die altogether. He looked the field over carefully and slid in sideways to a safe landing. And when he took off he cleared the surrounding obstacles by the skin of his teeth, but he made it because he knew he could do so before he opened his motor.

This unusual knowledge of his art has been evident for years to those who knew his work. It was apparent when he started for San Diego to place his order for the Spirit of St. Louis. He

knew exactly what he wanted, although no plane of the kind had ever been built, and the plane he got was just what he needed for a lone flight across the Atlantic.

His natural reserve and dislike of prediction as to what he would do were apparent while the plane was building. He tried to keep his preparations secret. He did not want to say he would do something until he felt sure he could do it. Not until the plane was ready for test did he permit his plans to become known, and after the first test he was sure that he had a plane suitable for the task. He took it up and was so happy in its performance that he went through combat tactics with a fast army pursuit ship, much to the consternation of the other pilot, who did not know that Lindbergh could see him through the skylight on the roof of the cockpit. Fighting in a blind plane is something that few pilots would attempt, but Lindbergh kept well within the bounds of safety.

He never "stunts" in the Spirit of St. Louis now — he never has since his first day in the air with it. But he glories in daring flying and is never so happy as when he can take out a fast plane and gambol through the air with all the exuberance of youth.

When he felt he could safely start, on the basis of tests which he had made of his plane, he launched out in the first of those flights which brought him to the attention of the world and which showed his courage and driving force. There was no more hesitation after that, even though he still refused to talk. Instead, while others talked and squabbled, Lindbergh started his great career, going with lightning precision to the goal he had set himself.

AND THE LAST WAS FIRST

He was last in point of time in preparation but easily first in accomplishment. He left San Diego one evening and flew straight as an arrow through the night to St. Louis. That seems a small part of his record now, but at that time it was the longest flight ever made by a lone man, 1,600 miles over mountain and desert and prairie, through the dark. And when morning came he was not more than fifteen miles off his course. When he came down in St. Louis, it was felt that here was a man who knew his business. The unknown Charles A. Lindbergh, mail pilot, who was apparently attempting the suicidal feat of flying alone over the Atlantic, began to take on a more definite personality and instantly there was curiosity about him.

Another day and he flew to New York with the same unerring accuracy. Those who saw him arrive that day will never forget the effect it made upon them. They were waiting for Byrd's big three-motor plane, when toward Roosevelt Field came a graceful shape with wide-spread wings which slowly circled the field. There is distinction to Lindbergh's flying. A cry, "There is Lindbergh!" and while the watchers waited incredulously the silver plane settled down. From the extraordinary cockpit the smiling face of a boy looked out as he idled his motor, waiting for it to cool off. And when he stepped to the ground, and the people gathered there saw him, the reputation of Lindbergh began at that moment to grow. There was an air of foreordained success about him. His slender height and youth, his smile, the modest way in which he spoke of himself and his plans won the hearts of all who came in contact with him.

There were a few days of waiting and then Lindbergh's quiet courage and decision were shown as they never could be again. One rainy night, when the field was a bog, he got word that the weather was clear over the Atlantic and seemed to be clearing along the coast. He hastened to the field, gave orders to have his plane made ready and went back to his hotel to rest an hour or two. It did not seem possible that he could get away. No man ever started on a great adventure in more depressing circumstances. It took cold courage and iron resolution to take off that morning.

Every one was nervous but Lindbergh. He stood in the pale morning light, as the rain stopped, watching his gas tanks being filled and glancing occasionally at the sky. He seldom spoke and his face had the eager, tense expression of a man about to run a race, but a race against sleet and cold storm which might be waiting for him over the tossing sea. He was just as calm when he climbed into his cockpit, waved his hand and opened the motor, and the plane started its slow movement down the field.

Everything in him, all his skill and judgment were matched against unfavorable odds. It seemed that he barely got off the ground in time, but he has said since that he knew he would make it before he had gone half-way down the field. He felt the life in his plane, knew that it would lift, and although he cleared the telephone wires by only a few feet, it was no more than he had done when he skipped over the tops of trees in a Jenny a few years before.

Once over the ocean, when he saw ice on his wings, he was tempted to turn back, and would have if he had not found a

warmer strata of air. He did not intend to take unnecessary chances — no reason to try to force his way through against overwhelming odds; but so long as he found a hole in the fog and mist, he went on. And finally the sky opened out before him as the day came and he cruised along until the great moment when he saw a fishing vessel and came down to ask the way to Ireland.

So strange an inquiry had never been made before. No one has ever learned whether the fishermen knew what he said or how they felt when they saw this silver plane with roaring engine coming out of the West. It was one of those strangely simple things which characterize Lindbergh, equal to his carrying letters of introduction to Paris for fear that nobody would know who he was. And then the emotional wave which overwhelmed him at Le Bourget, the adulation of two continents, which might have turned the head of any man and through which Lindbergh came out so happily.

That was the greatest flight in the history of aviation. Even De Pinedo's remarkable achievements, Byrd's great flight to the Pole and his trip across the Atlantic, the longer flight of Chamberlin, the flights of Brock and Schlee, and Costes and Lebrix, could not equal this sweeping flight of one man over 3,600 miles of land and ocean. Probably never again will there be the same emotion awakened by an achievement of a single individual.

HIS PURPOSE UNCHANGED

Lindbergh came back the same man who went away, untouched and unspoiled. His only thought was still the good of

aviation and a desire to do something for international good-will, which was probably born of his experience abroad, for it is almost certain that he could not have anticipated the effect of his flight on Continental feeling toward Americans. He wiped out with one smile the growing dislike of his people. And his Latin-American flights were the result of what he had done abroad.

It was a natural result. Aviation has a greater international bearing at present than any other means of communication in the world. Many aviators have felt this influence of their profession. Byrd has felt it and is continually thinking of how best to turn aviation to a means for international peace rather than international strife. Men seem able to carry messages of international friendship on wings more successfully than by any other way. Their flights arouse emotional inspiration that is more effective than all the oratory of statesmen.

But before Lindbergh turned his plane southward he used it in a great flight for the good of aviation itself. He wants to hasten the day when air lines will cover the United States, when most of the mail is carried between distant points where such transport is commercially practicable, and to bring nearer the time when any one may fly in safety and comfort and on schedule. So he took his plane on a trip which included every State in the Union, and roused an enthusiasm for aviation which had never been known before.

Airports sprang up behind him, and there were more fields built as a result of his visiting cities than were built in all the years before he flew. Many of them are named for him. Airplane factories began to feel the stimulus of his achievement. Everybody

seemed to want to fly. The joyriders stood in long lines at flying fields and their numbers grew as the months went by. The demand for airplanes became such in a little while that it was necessary to order a plane ninety days before it could be delivered. Pilots stood around the factories waiting eagerly to take their planes away. Lindbergh has pushed commercial aviation ahead by many years.

When he first determined on his Latin-American flight he has never said. But the difference between the United States and Mexico particularly seemed to him a natural opportunity to exercise the influence which he realizes but never abuses. Between his public appearances he is as retiring and reserved as a human being can be, but he undoubtedly knows the power which his mere presence has in soothing international jealousies.

To the Latin-Americans Lindbergh has been almost a supernatural being. They look upon him as belonging to themselves as much as the United States. In the midst of political selfishness and hatreds, Lindbergh came to them as the bright embodiment of all their ideals, a source of inspiration and happiness. In Mexico all the unhappiness and uneasiness of a life in which the firing squad was the most common expression of political victory were forgotten for the days that Lindbergh was there. Ragged peons and those who sat in power welcomed him with the same glad enthusiasm. He made a bond between classes which had not been known in years. Even though the weight of a sad existence came upon them again after he had gone, for a few days he made them forget the hatreds which had torn their country.

"That boy has brought more happiness and joy into life than any man who has ever lived," said a gray-haired Mexican Senator one day. That was the way they regarded him, as one clean and brave and modest, who had in him all the things they might have wished for themselves.

And next to the personality of the man they admired his skill and the mastery of the graceful plane. Lindbergh was late in getting into Mexico City. He was lost, frankly, owing to one of the few lapses he has ever shown from complete preparation. He had not plotted his course from Tampico to Mexico and went far out of the way. He admitted it, with no attempt at excuses. But when he did finally come, he showed his uncanny skill in avoiding other planes and people on the field, waiting until there was a space in which he could land and then swooping into it in a graceful glide.

FLYING ON SCHEDULE

That was the only time he has been late. On every other flight of this trip through Latin America and the northern countries of South America he arrived when he said he would. It was the same insistence upon flying to schedule which he emphasized on his flights around the United States, for commercial aviation, he maintains, must keep to schedule as faithfully as the railroads if planes are to compete with other forms of transportation.

His flights in Latin America have been some of the most difficult he has ever made. They were over country where at times it was impossible to come down — over jungles and tree-covered rivers, over valleys filled with fog, through which the peaks of mountains poked their way as the only guide posts in a strange

land; over many miles of water and tiny islands. He made them all with the same precision with which he has always flown.

He has enjoyed it, every bit of it. He was asked if he would not like to get home.

"Why, it's fun playing around new countries," he said.

Lindbergh enjoys seeing new things and having new experiences. He has all a boy's eager curiosity. When he has had an opportunity to get off with a few congenial friends, as with the air pilots in Cuernavaca and in Panama, he has had the time of his life. At Cuernavaca he went out with the pilots on a night of local celebration and carried a candle and sang with the others in true Mexican style until early in the morning. He played tricks on them and laughed like a boy at his success. He is a very human person, Lindbergh, and has a strong sense of humor. His dry gibes at his friends sometimes find them unprepared.

Just what he will do next he does not know. He wants to go away where he can be quiet and, he added, expressing this wish:

"I'd like to do a little flying."

SOME CHARACTERISTICS *

Captain Charles A. Lindbergh is a man of nicknames. He gathers them wherever he goes. He is "Slim," "Lucky," "Charlie," of course, and sometimes "The flying fool." He was too young to take part in the war, having been born on Feb. 2, 1902. He is 25 years old. He is tall — more than six feet — slender, but with powerful shoulders. He has blond hair inclined to curl and fearless blue eyes.

* By permission of the New York Times.

As his name would indicate, he is of Swedish descent but several generations distant. His father died when he was quite young, and he attended school in Detroit, where he was born. Later he went to school in Washington, D. C. All of his primary education was obtained in public schools, and he was noted for nothing except his height. The lad was mechanically inclined and matriculated in the School of Mechanical Engineering of the University of Wisconsin. He was not graduated, however, as the desire to fly seized him when he had studied a year and a half and he tossed his books aside. His first flying experience was in Lincoln, Neb. Several instructors in the flying school there took part in training the young man and soon he was a capable pilot. He realized, however, that he was far from experienced and so enrolled in the Army Flying Service at Brooks Field.

He completed a course at Kelly Field, Texas, and was placed in the reserve. All this has happened during the last two years. After graduating from the army school, where he did his work with the rest of the class, including a certain amount of stunt flying, he looked around for something in the flying line at which he could earn a living. He found the air mail. He has flown the routes from St. Louis to Cleveland for the last year. He is now on an indefinite leave of absence. Several times during his flying experience he has found it necessary to drop out of a plane while in the air and parachute to the ground. Once when flying above a fog bank 5,000 feet thick and very dense, his gasoline ran out. Knowing that there was no chance of finding a landing space on the rocky terrain below, he dropped out, leaving the plane to crash on the rocks, but saved his own life. Once he was

forced out by fire and once by ice on his wings. Never once has he been injured in an airplane accident, accounting for his nickname "Lucky." He was commissioned a captain in the Missouri National Guard last year, still holding his Second Lieutenant's commission in the army. He first became interested in the New York to Paris flight last Fall following the disaster to the Sikorsky plane. He found several backers in St. Louis, several of them members of the St. Louis Chamber of Commerce, and early in February the order was placed with the Ryan Air Planes for the plane. It is not entirely a specially built job, but the huge gasoline tank required an unusual disposition in the cockpit.

He has amassed the total of 1,800 hours in the air, more than some men, who consider themselves old pilots. This he has achieved by taking every opportunity for flying — hopping in every plane he saw and taking it aloft.

Captain Lindbergh, with the fearless blue eyes, is "woman shy." He has never entertained thoughts of getting married, he says, and there is no young woman in the offing waiting to greet him on his return. He blushes when he answers questions sometimes and always when questioned about a possible sweetheart. He chose to fly alone to Paris, while all the other entrants in the international dash will have two or more men in the cockpit. He thought of taking another man, but preferred the weight in gasoline. "Anyway, he might not be good company," he said.

Captain Lindbergh is not a scatter-brained youth, as a great many persons felt before his arrival in the East. As reports came from San Diego of his proposed flight alone to Paris, very few considered him really in earnest. He is in earnest. He is cool

as he faces the task ahead of him. He realizes the strenuous round of hours when he must sit cooped up in the narrow cockpit. He has never been abroad and speaks no language but English. But he has an all pervading confidence in himself, his plane and his engine, and no thought enters his head but that of success. He is prepared for danger. There are the same emergency arrangements in his plane as in all the others, but he never thinks of them. Meet your troubles when they arrive is his motto.

At the St. Louis flying field Charles Lindbergh was noted among the other air mail pilots for his penchant for practical joking.

"Bud" Gurney, formerly his room-mate ate a lot of chocolate-covered cherries one day and developed a thirst. He asked Lindbergh to get a drink of water for him. Lindbergh brought in a pail of kerosene and Gurney drank several gulps before he detected the deception.

Another favorite trick of Lindbergh's was to put a cricket in one of the other pilot's beds and when it was discovered to declare it a scorpion.

According to one of his backers, Lindbergh has a rubber constitution, does not smoke, drink, even coffee, chew or like the movies. He does not like to stay up late at night and hasn't much use for girls or dancing.

"He had rather sleep on the floor than in a bed," adds Mr. Knight. "He is no talker and likes to do something daring and let the act speak for itself. He usually picks out something startling, which no one else will attempt, makes sure that he can do it and then does it offhand."

"When he was in high school, at his university and at the Army Flying School he never went out for athletics, but he kept himself in perfect physical trim. He is a perfect picture of clean-cut youth. His life of flying, stunts, barnstorming and rigid discipline have made him nearly impervious to ordinary physical fatigue."

Lindbergh has a way about him of making every one he meets believe in his ability to accomplish what other men have failed to do in twos and threes. It might be called personality plus and it might come from his quick smile.

When it became generally known that he was going to try to win the Raymond Orteig \$25,000 prize, he received a deluge of rabbits' feet, horse shoes and other luck charms. Before he left San Diego he said to "Phil" Love, air mail pilot:

"Take good care of that trunk, Phil, because there is a tray of rabbits' feet and horse shoes in it."

LINDBERGH'S SUCCESS A PHYSICAL CULTURE TRIUMPH *

They called Charlie Lindbergh "The Flying Fool."

Change the name, for he is *anything but a fool!*

He made his spectacular and seemingly miraculous flight across 3,600 miles of peril *knowing that he could win.*

The three things he needed for success were a fair break with the weather, a dependable airplane and HIMSELF.

Fortune favored him with the first two, but WISDOM gave him the *real power* that made victory possible.

* * * * *

* From the New York Evening Graphic, May 23, 1927.

Charlie Lindbergh won for the reason that he was *physically perfect*.

That made him mentally perfect, alert, alive, awake.

It gave him the dynamic, driving energy to conquer the dragging weight of sleep, to ignore the thought of fear and to rise supremely confident to a test that has sent a number of brave men to their death and that has made others hesitate to step off.

Lindbergh had to be physically fit to attempt this flight, with only two hours of sleep in the preceding sixty hours before he hopped off.

It took this boy of twenty-five years thirty-three and a half hours to cross the ocean.

It took him *every day of his life* to prepare for the flight.

He has always been committed to the ways of physical culture.

He kept his superb body constantly at concert pitch.

He exercised regularly.

He gives attention to sleep.

He has never drunk liquor, nor smoked. He has no use even for tea or coffee.

He has no use for devitalizing, enervating petting parties.

He knows how to curb his appetite for food.

Every one of the great laws of physical culture has been followed by him with almost religious fervor.

Before he started there were kind but unwise friends who wanted him to eat more.

They tried to force him to take large quantities of food.

They urged him to take a bottle of coffee "to brace him up."

Charlie Lindbergh smiled kindly, and did none of these things.

Before starting out he ate sparingly and simply.

He slipped a sandwich or two into his pocket, put a couple of quarts of water in a flask on a handy hook, and stepped forth to immortal fame.

When he landed in Paris he asked for a glass of milk!

* * * * *

There is a legend that the mighty Napoleon lost the Battle of Waterloo due to physical distress because of unwise eating.

Maybe Charlie Lindbergh has heard that story. Maybe he hasn't.

At any rate he didn't make a similar mistake in his fight to conquer the Atlantic Ocean.

He knew if he ate large quantities of food that his vital energy would be so busy with the animal process of digestion and assimilation that there would not be available the abounding force needed to keep him alert every trying moment of that long voyage.

He knew that overeating more than any other factor slows down the average man to a mere shadow of the power that is in him.

Charlie Lindbergh kept awake because he was in control of his body.

"Average" men, filled to repletion with heavy foods, are half asleep all the time.

Such men cannot imagine how it is possible for any human

being to keep from sleeping for more than thirty hours at a stretch.

It might be possible, they concede, to do it on the stimulation provided by coffee or alcohol or quantities of food.

Such stimulation is not lasting, no matter from what source it comes.

Charlie Lindbergh shows the immense power that can be attained by depending upon *nothing except the latent strength of the body itself*.

To such a man as he, physically at high notch, abstinence from food, from sleep and from other apparent necessities are mere incidents.

The American doctors who surrounded him at Le Bourget Field to minister to an exhausted aviator found a bright-eyed, smiling youth who waved them away. He knew more about his own body than they did.

Medical stimulants are not for this young superman! He charted his course to Paris as he had chartered the course of his health.

He knew that the physical mechanism which gave him the intelligence to make a "bee line" for Paris drew its power from right living.

How many realize that the body is the most superb engine in creation?

* * * * *

One other tremendous factor in the success of this gallant American boy is a mother who is an ideal of fine woman-hood.

This marvelous mother quietly showed her son that she be-

lieved in him; came to say good-by and then went back to her work with courage and faith in her own heart.

She is a mother who inspired, too, in her boy the *desire* to be sturdy and strong and reliant.

Her example is worthy of imitation!

Great mothers make great men.

All the world is indebted to the pioneer. He is the scout who in the van of civilization goes forth to fight and conquer unknown foes, to meet and win through unknown perils, that the progress of humanity may go forward toward the fulfillment of its ultimate destiny.

In this book, PIONEERS ALL! are chronicled tales of certain of the world's pioneers whose efforts and achievements have resulted in real and definite benefit to society and have proven vital to the expansion of civilization.

The breath of the seas, the prairies, the great rivers, the lofty Rockies blows through its pages. From the great expedition of Lewis and Clark to the conquest of the Atlantic by air, daring heroism, action, thrills, follow across its pages in a never ending pageant—a vivid word picture of the March of Progress,—to entertain, enlighten and inspire its readers.

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